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ELECTRIC RAILWAY JOURNAL

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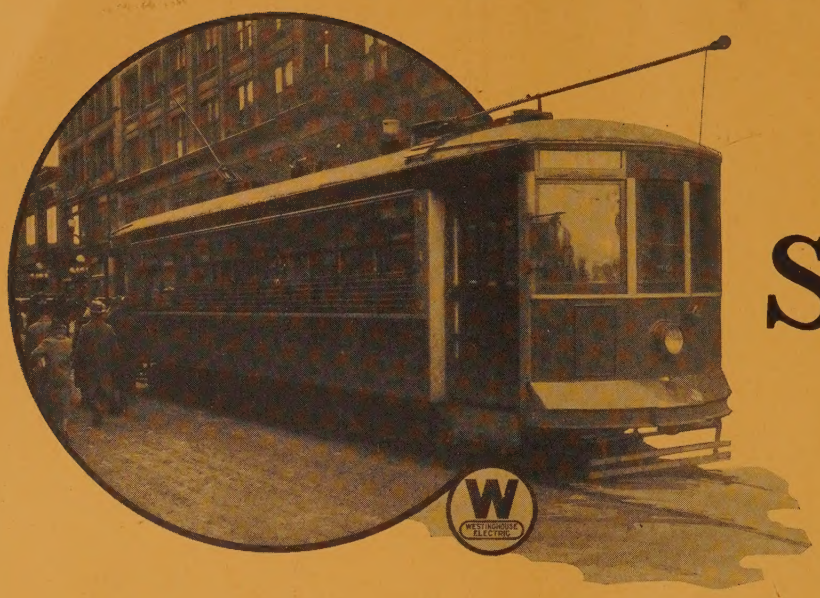

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Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

Published by McGraw-Hill Publishing Company, Inc.

CHARLES GORDON, *Editor*

Volume 67 New York, Saturday, April 3, 1926 *Number* 14

Turning the Storrs Suggestion to Good Use

GOOD use of Mr. Storrs' daily dozen of homely virtues and of Mr. Budd's remarks at the recent meeting at Indianapolis has been made by the state information bureaus and by electric railways here and there. Of course, the daily dozen taken together looks like a formidable program. But it isn't. One company, at least, is publishing one of Mr. Storrs' suggestions, prominently displayed, each month in its house organ. That is a good idea. Strange to say, the management of that company—the Boston Elevated Railway—and its employees were much less in need of having the suggestions reiterated to them than are many others. In many respects the remarks made by Mr. Storrs, Mr. Budd and President Coates at the Indianapolis meeting supplemented each other. All were of interest both within and without the industry. The material in these remarks capable of public use should be repeated again and again. The industry needs just the stimulant they contain.

The Remedy Must Not Be Worse than the Disease

REDUCTION of vehicle speeds has become so common in every large city of this country, and in European cities as well, that it has come to be looked upon as a characteristic evil. Congestion reached the point a number of years ago where it was felt necessary to take steps to remedy it. In fact, traffic regulation has been resorted to in most cases to prevent traffic jams due to lack of co-operation among drivers approaching an intersection, rather than to speed up movement of vehicles.

Hand signals given by the traffic officer in charge of the corner were succeeded by semaphores and signal lights, manually operated. Replacing the hand by a mechanical arm did not tend to speed movement, since it took away the incentive to signal vehicles individually and to depend entirely on the indication displayed. It did remove the opportunity for misunderstanding the signals and prevented accidents. With the exercise of discretion and good judgment on the part of the officers, fairly good results have been obtained with this method.

Some years ago, in an effort to speed traffic on Fifth Avenue, the principal north-and-south vehicle thoroughfare of Manhattan Borough, New York City, a "synchronized signal system" was installed. What this did was merely to take control of the signal lights out of the hands of individual traffic officers and concentrate it at 42d Street, the heaviest intersection. A cycle was worked out to accommodate the traffic in the two directions at that point. The indications were repeated electrically for other points. Naturally different conditions exist at all other intersections, and vehicles are held from moving in either direction at times, cutting down the capacity of the roadways.

Nevertheless, the same system has been adopted on several main thoroughfares in New York, and in a number of other American cities. That the results often are far from advantageous is indicated in an article in this issue. In some instances as much as 15 per cent more time is needed to pass through the congested section when the synchronized lights are used.

In marked contrast, a system of traffic control developed by engineers of the Chicago Surface Lines and installed in the Loop district has permitted speeds considerably higher than had been possible with individual manual control. The results were given in detail in an article in this paper last week, page 536. It is stated that due to the new system, combined with a rerouting of the street cars, speeds have been increased 50 to 80 per cent.

The subject of traffic regulation is under consideration by a committee of the Transportation & Traffic Association. The matter is of such import to operators of transportation systems, as well as to the general public using the streets, that it is to be hoped a real analysis will be made that will lead to improvement of traffic control all over the country.

Engineering Made a Means of Securing Better Public Relations

WHEN Chicago's Loop traffic was speeded up by the new signal system, as mentioned above, it offered an opportunity for co-operation between the street railway and the city that has been much more potent in building good will than any number of abstract statements by the publicity department.

Two years ago traffic conditions in the Loop were bad, with an ever-present congestion of street cars, vehicles and pedestrians. Knowing that something radical would have to be done, the Surface Lines laid out a plan for improving conditions that gave opportunities for joint action on the part of the city and the company. The first move was made by the Surface Lines, which took all left-hand turns of street cars out of the congested area. It involved the expenditure of some $150,000 for new special trackwork. This move was followed by an order on the part of the city prohibiting all vehicular left-hand turns in the same area. Together these two changes made a marked improvement in conditions, but left a great deal to be done.

Far more spectacular from the standpoint of unusual accomplishment has been the pioneer engineering done by the Surface Lines organization in designing and planning the system of traffic lights that have contributed so much to speeding up traffic and reducing congestion in the Loop. Elimination of useless delays, while a very desirable thing from the standpoint of the company and its car riders, is of equal value to everyone who has occasion to do business in the downtown area, either on foot or in a vehicle. The benefit is even more widespread in that for the merchants the street capacity has in effect been increased.

Aside from the physical accomplishment of this installation, it is particularly appropriate that the co-operation of the two principal parties affected, the city of Chicago and the Surface Lines, should have resulted in making the system of traffic control a marked success.

Advertising Fundamentals Often Forgotten

ADVERTISING for patronage has been turned to good account in a campaign being conducted by the United Railways & Electric Company, Baltimore, Md., noted in the JOURNAL for March 27. It is a straight appeal with merchandising as its central theme. The campaign is one not only of big space but one with a big purpose. It points a moral both by its directness and its force. The company believes that understanding will do more to solve the transportation problem than will arbitrary rules.

Too many, far too many, advertisements in the electric railway field have been controversial in character, have offended this or that element of the public by their very wording. Others have smacked of braggadocio. In one case that comes to mind stress was laid on the snow-fighting equipment of a particular company. During the winter this company had to suspend service on a number of lines. It did not matter to the public that the storm was unprecedented in its severity. The thought that remained in the minds of the public was that the company itself had indicated that it was prepared for any emergency.

It has been said that the Baltimore campaign is one of merchandising the service. It is. But the advertisement showing Lexington Street on Jan. 20, 1926, not only sells the Baltimore service effectively, it shows the real value of the street car and the conditions against which the company must contend. It does this by suggestion, which is the highest form of advertising art.

There are times when the electric railways need to state their cases against the injustices worked against them, but these instances are not so prevalent. Even where they are, the message should be conveyed subtly and with finesse. This the Baltimore company is doing. The campaign there meets all the fundamentals of what advertising for business should be, but at the same time the opportunity is not being lost to convey an idea of some of the problems against which the company has to contend. Entirely aside from the good that the campaign will do the Baltimore company, there is a lesson in the advertising that should be made to redound to the benefit of the entire industry. It is a campaign that appears to be distinctly worth while.

The Whole Is Greater than Any of Its Parts

OCCASIONALLY a man who "lets not his right hand know what his left hand doeth" may upset tradition and common sense with the scoring of a triumphant success. Generally, however, he arrives at a down-and-out condition with quickness and dispatch. Co-ordination and co-operation of all his faculties are needed if he is ultimately to find his name staring out at him from the pages of "Who's Who." Like man—like railway. One department, one official, cannot hope adequately to cope with all the various problems which arise.

Heretofore railway managements have evinced a disheartening tendency to saddle the entire responsibility for such an important matter as car design upon the mechanical departments. There, as in the analogy drawn above, an occasional instance has occurred in which the engineering staffs have been equal to the situation, have shown a real grasp of passenger-handling requirements and have designed equipment satisfactory in every respect. In most cases, however, the cars obtained in this fashion have left many things to be desired from the standpoint of the transportation department, which has had to merchandise car rides. Cars easy of maintenance but impossible as passenger-handling mediums, or cars fairly well adapted to one type of service but possessing no characteristics recommending them for all-round service have been turned out.

The Pittsburgh Railways was one of the first to realize the fundamental truth of this tenet. For more than two years every major activity of the company has been passed upon by a committee made up of the general manager, the superintendent of equipment, the general superintendent of transportation, the commercial manager and the assistant general manager. Whether it be a matter of specifying new cars or of determining the relative merits of two operating schedules, the ideas of each department are thus capitalized.

Most recently the committee has had to pass on the design of the 50 new cars just ordered by the company. Factors such as the type of door control were considered in the light of passenger-handling efficiency as well as that of mechanical excellence. Thrashing out such matters as these in advance cannot result otherwise than in enormous savings through elimination of costly mistakes in judgment. The viewpoint of each department has much to recommend it to the careful consideration of every other department. Not infrequently the public relations department can throw light on a matter which has been puzzling the best technical brains. The mechanical department, in turn, may often reveal a startling grasp of the problems confronting the merchandising division. That the whole is greater than any of its parts is no mean theorem.

Railways Are Accused of Neglecting Their Own Interests

CHARGES of failure to comply with the common sense program of standardization constantly urged by manufacturers of bus equipment have been lodged against the railway industry. George Scragg of the International Motor Company recently made an address before the National Automobile Chamber of Commerce, the substance of which dealt with the alarming tendency on the part of state legislatures toward over-regulation of bus design and operation. His most startling statement, at the very end of his address, was that very little assistance could be expected from railway companies in coping with this situation since they themselves were notorious offenders in the matter of insistence upon individual requirements in bus design.

The allegation that "those in the traction industry who yell the most about the laws are the ones who are doing the same thing themselves by laying down special specifications" may strike a little too close home for comfort in many cases. It seems that this charge has been heard before and from within the industry itself. Were it not so, operators might conceivably gloss over the terms of the criticism and, with a neat gesture over the shoulder with the right thumb, strike the attitude of the immortal Tweed Ring cartoon by Thomas Nast—"It may be true of the next fellow but it isn't true of

me." Unfortunately this complacent attitude cannot be adopted with entire assurance that it will sit prettily upon the shoulders of the industry.

From various sources comes the accusation that traction operators delight in pointing with pride to the individualized cars they have on their road. An operator speaks of "my car," meaning one that he has designed. It is almost with the feeling of complete futility which struck the Prophet Jonah before the gates of Nineveh that Mr. Scragg states "it seems impossible to stir him into action in this matter." Is it then true that the battle against unjustifiable surveillance of bus operation by the various states must be fought out by the manufacturers? Surely the railway companies who operate co-ordinated bus and trolley services are just as seriously affected. They cannot afford to tolerate or encourage a policy of over-legislation against bus operators, since they themselves will be among the first to suffer.

Conditions within the industry with regard to standardization of equipment are slowly but surely showing signs of improvement. Criticism has been based on the grounds of past and perhaps present performances, but there seems hope for the future. The comments which have been made on the tendency toward oppressive bus legislation by the state should meet with intelligent response from every wide-awake railway man. There is a battle to be fought and the traction companies are in a position to plant very effective artillery fire in the ranks of the enemy. It should not be possible for anyone to charge that the railway industry has been guilty of neglecting its own best interests.

Better Method of Exchanging Tokens Is Needed

FOREIGN street car tokens are accumulated in considerable numbers by nearly every electric railway which employs this type of fare collection, and the problem of their disposal is somewhat perplexing. With many of the larger companies, the accumulation is sufficiently rapid to warrant comparatively frequent exchanges. Often this is done in lots of 100 or more, token for token, regardless of value. In the smaller communities, however, the accumulation is slow. While the total number of foreign tokens on hand may be relatively large, there may be no more than ten or twenty from any one other company. Under such circumstances, it seems scarcely worth while to open direct negotiations for their exchange.

A possible solution of this problem is suggested in a letter published this week in the Readers' Forum. C. S. Speed, general manager of the Evanston Railway, proposes that a token clearing house be established to receive and return to the original owners tokens belonging to railways all over the country. His suggestion is that the tokens be accepted by the clearing house in lots of 100, no matter what the issuing company, and credited to the receiving company at 5 cents apiece, regardless of the face value when returned to the original owner; the latter would be debited with the face value.

Such an arrangement would undoubtedly be a convenience to the railways, but it seems unlikely that it could be made financially self-supporting. Only some 150 railways use tokens out of a total of more than 800. While many of the larger railways are included among the token users, the total number of foreign tokens collected during the course of a year probably does not greatly exceed 500,000. Assuming that half of this number, or 250,000 a year, would pass through the clearing house, and the collection of an average charge of 2½ cents per token, the clearing house would take in slightly more than $6,000 a year. This would not pay the cost of a permanent organization to do the work.

There is a real opportunity for the development of a satisfactory plan to handle this matter. Such an activity would seem to fall reasonably within the field of association activity. In the development of any solution, however, care should be taken not to make the remedy more complicated and difficult than the situation which it is intended to cure.

Those Who Cry Loudest Have Studied It the Least

REPLACEMENT of trolleys with buses continues to offer a topic that fires the imagination of news writers—or more particularly writers of news headlines. Over a dispatch from Detroit dated March 31 a prominent Eastern evening paper carries this imaginative head, "End of Trolley Seen in the Bus."

Examination of the article itself reveals it to be a somewhat general discussion of growing bus manufacturing activities in Detroit. Combined with this is a popular "write-up" on the gas-electric type of vehicle. There is no supporting data to justify the heading affixed in the newspaper office.

Nevertheless, thousands of headline readers have been given the impression that new evidence has accumulated to relegate the trolley to the scrap heap. Since the article emanates from Detroit, it may be presumed that it was intended to emphasize the growing importance of bus manufacture as a prospective new market for the "motor city." That the manufacture of buses is only in its infancy, and that the future challenges the imagination in the effort to foresee the magnitude of the operations which may result from the substitution of common carrier highway vehicles for individual transportation, is evident to every student of the subject. But that this development of the bus is dependent on the replacement of electric cars is a fallacy conceived in the mind of the surface thinker who knows little about the subject.

This fact is well expressed by Carl Parker, manager of sales, bus division, Reo Motor Car Company, in a recent article which appeared in the Indianapolis *Star* and is referred to elsewhere in this issue. In discussing the co-ordination of bus and trolley he said: "While the radicals are claiming that buses can efficiently replace the trolley, those who cry it the loudest have studied it the least and know least about it. . . . Don't eliminate the street car—just speed it up. Give it a chance to develop its efficiency. . . . In some cities in the United States the trolley car has never been allowed to develop its greatest efficiency. It is a better vehicle than most of us think it is because we have never had the chance to see it operate at its best. Give the trolley car the chance it has been yearning for and *you automatically put the motor bus in its best environment.*"

Those who herald the passing of the street car with the coming of the bus have adopted a narrow viewpoint indeed. To load the bus down with the burdens and restrictions of a minimum fare mass transportation agency would be fatal to its development. They are not friends of the bus who cry "Trolley Replacement!"

Street Car Operation Hampered by Unscientific Traffic Regulation

Observations Indicate that Usual Methods of Synchronized Control Retard Railway Operation—In Many Cases Sufficient Study Has Not Been Given to Adapting Regulatory Systems to Meet Needs of Particular Situations—Results of Signal Installations in Cleveland, Syracuse, New York City, Newark, Indianapolis, Birmingham and Detroit Are Described

By John A. Miller, Jr.
Associate Editor ELECTRIC RAILWAY JOURNAL

SINCE the original installation of signal lights to control vehicular traffic on a long section of Fifth Avenue, New York City, similar installations have been tried in a large number of other places. In many cases, however, there has been little or no attempt made to adapt the system to the real needs of the individual situation. Consequently the effect of the traffic control lights frequently has been to retard vehicular movement rather than to speed it up. Electric railway operation in particular often has been seriously hampered by the installation of such systems.

Advocates of synchronized traffic control signals claim several advantages for this method of regulation, among them being increased speed of vehicular movement, fewer accidents and reduction in the number of traffic policemen required. The actual experience of a number of important cities, however, casts considerable doubt on the merit of such contentions. That all of these benefits may be expected to follow the installation of signals seems unlikely. Statistics concerning general vehicular movement are difficult to obtain, but careful checks made by electric railways show clearly that the speed of street car operation has been reduced by synchronized traffic control, and there is reason to believe from their statistics of delays that the speed of other vehicles also is adversely affected.

Champing at the Bit—Traffic on Euclid Avenue, Cleveland, Waiting for the Green Light. Twenty Street Cars and Many Other Vehicles Are Held Motionless by the Synchronized Signal System, Although No Cross Traffic Is Moving.

About a year ago it was realized that traffic congestion had become a serious matter in Cleveland and a committee was formed, under the auspices of the Cleveland Automobile Club, to study the problem. After visiting eight other large cities, this committee prepared "A Report on a Traffic System for Cleveland," one section of the report being devoted to a discussion of synchronized signals.

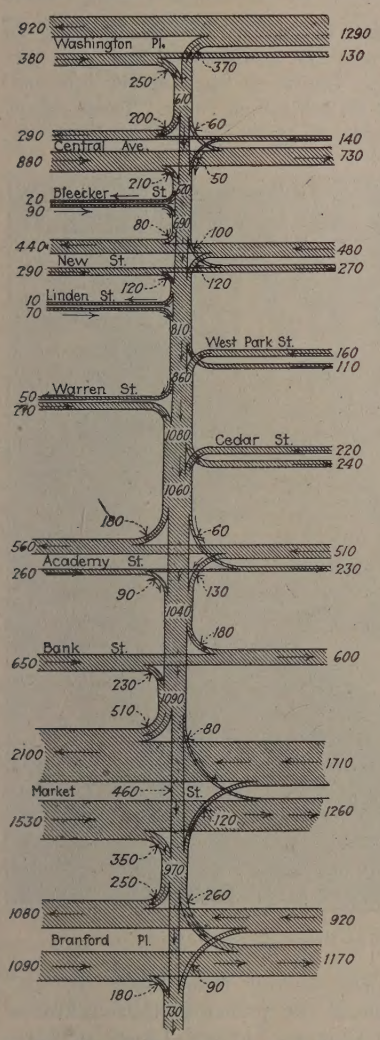
Concerning the result of traffic signals in Syracuse, this report stated: "After 32 intersections had been covered with synchronized signals the street railway company rearranged its schedule, cutting down the running time on some lines by six minutes. In the congested districts street cars were enabled to cut their running time in half." This statement of the committee is contradicted by checks made by the New York State Railways, which show that the running time was increased materially as a result of the installation. A summary of these checks follows:

EFFECT OF TRAFFIC SIGNALS ON RAILWAY OPERATION IN SYRACUSE

Line	Running Time Before, Min.	Sec.	Running Time After, Min.	Sec.	Increase Sec.	Increase Per Cent
Salina Street	9	14	9	32	18	3.0
Warren Street, James Street, Onondaga Street	9	19	10	09	50	9.0
Fayette Street	5	11	5	48	37	11.9

Recommendations made by this committee that a system of synchronized signals be installed in Cleveland were followed by the city. This was done on Euclid

Avenue for a distance of nearly a mile east of the Public Square. Nine blocks are controlled from a tower at the intersection of East Ninth Street. Time intervals are not uniform, but are varied at will by the traffic officer in the tower. The effect on car operation has been similar to that in Syracuse. The Cleveland Railway has added one minute to the running time each way in this district. A noticeable increase in peak power demand caused by the simultaneous starting of so many cars has resulted in an increased demand charge to this company.



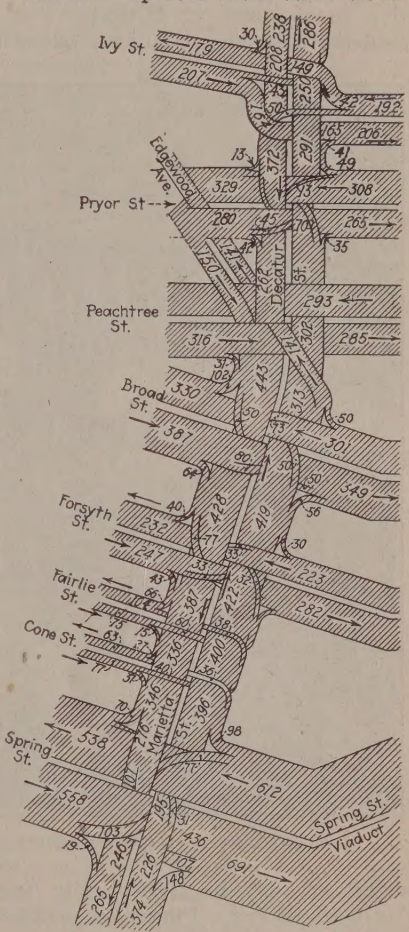
Traffic Flow Is Different on Each Cross Street, the Maximum Being Nearly Double Any Other

Investigation of the operation of cars of the New York Railways on Broadway, New York City, immediately before and after the installation of synchronized signal lights showed a decrease in speed of about 8 per cent. Failure of the control system to allow for the difference in conditions at various locations is the principal cause of trouble. In the opinion of the railway management it would be better to divide the area covered into smaller sections, independently operated.

During the summer of 1925 a system of synchronized traffic control was established on Broad Street, Newark, N. J. A master control tower was erected at Market Street, the busiest intersection, and the movement of all traffic through an area extending about ¾ mile on each side of the light was obliged to conform to its indications. Careful checks made by the Public Service Railway of the running time of its cars on Broad Street before and after the establishment of this system showed a marked reduction in the speed of operation. A summary of the results of this investigation is given in the table in the opposite column.

From this it will be seen that the average total time of delays due to passenger movement on a trip through this area remained approximately the same after installation as it was before. The average total of delays due to waiting for clear traffic signals increased from one minute and five seconds to two minutes and 25 seconds per trip. Results similar to those in Syracuse, New York and Newark are reported from other cities.

Interference with railway operation was the indirect result of the installation of synchronized signals in Indianapolis. Some months ago such a system was installed on North Meridian Street, a principal north and south automobile thoroughfare of that city. There are no electric railway tracks on this street. The normal volume of traffic on North Meridian Street is at least five times greater than the traffic on the intersecting streets, yet the intervals were not arranged in this ratio. Since the installation of the signal lights it is estimated that at least 25 per cent of the traffic that formerly used Meridian Street has been diverted to adjacent parallel thoroughfares. This has added seriously to the congestion already existing on those streets and has hampered the operation of the Indianapolis Street Railway there.



Traffic Flow in Business District of Atlanta, Ga., Showing Great Differences in Conditions at Adjacent Street Intersections

Another instance where synchronized control has caused traffic to be diverted to other streets is reported from Birmingham, Ala. Traffic signals at 24 street intersections in the business district of that city are controlled from a single point. The locations of these lights are shown in an accompanying illustration. Equal time intervals are allowed for movement in each direction with a five-second pause between. The intervals can be changed at will, 30, 35, 40 and 45 seconds being used according to circumstances.

EFFECT OF TRAFFIC SIGNALS ON RAILWAY OPERATION IN NEWARK

Date	Direction	No. of Trips	Average Running Time per Trip Min. Sec.	Average Passenger Delays per Trip Min. Sec.	Average Traffic Delays per Trip Min. Sec.
Without Signals					
June 23, 1924	North	24	13.45	1.40	1.03
June 23, 1924	South	24	13.45	1.41	1.07
Average			13.45	1.41	1.05
With Signals					
Sept. 15, 1925	North	20	15.57	1.26	2.07
Sept. 15, 1925	South	19	15.10	1.44	2.43
Average			15.34	1.35	2.25

Placing the signals under control from a single point has had a tendency to delay railway operation unnecessarily because many intersections have lighter traffic than exists at the controlling point and time is wasted in waiting for the cross movements elsewhere to end. On the other hand, this unnecessary waiting makes automobilists avoid the area controlled by signals, thereby relieving congestion and helping the street cars somewhat. It is believed by local observers that on the whole the signal system slows up traffic more than signals operated individually to suit the needs of the various intersections would do.

Approximately 125 traffic signals are now in operation in the city of Detroit. For some years past students of traffic conditions talked about methods of diverting through traffic away from the congested business district. Finally, a so-called "loop plan" was evolved providing a route which skirted the outer edge of the business district. In addition to designated the loop a number of one-way streets were established and signals installed at many locations. This system was placed in operation Feb. 8.

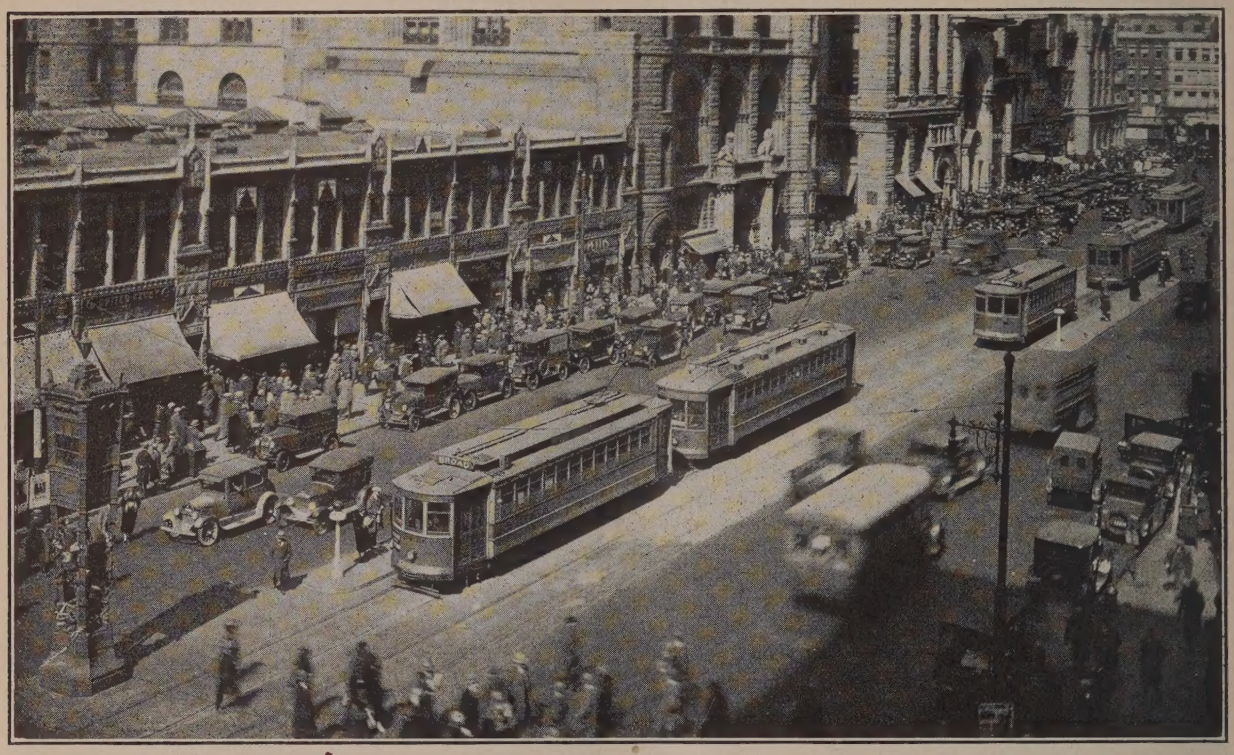
Signals are of the three-light type with red, amber and green lenses arranged perpendicularly on stanchions, located in some instances on one corner, sometimes at two corners and at other times in the center of intersections. The signals are synchronized in groups and in general have intervals of 40 seconds for east and west traffic and 40 seconds for north and south traffic with four seconds for the amber light. Because of the lack of uniformity of location of the signals drivers of vehicles must look in all directions at each intersection to find out what to do. Frequent tie-ups have occurred and congestion at times has been worse than before. Street cars have been delayed from six to eight minutes per trip through this section of the city.

Comment was made by the Detroit *Free Press* on Feb. 13 concerning traffic signal lights as follows: "An obtrusive result so far of the installation of the loop system has been the slowing down of vehicular traffic, sometimes almost to the point of obstruction. The delay is reflected in the movement of both automobiles and street cars and the difficulty in at least a part of the area affected seems to arise as the result of too frequent shifting of lights against movement on the through streets."

In Chicago a system of traffic control, differing in important respects from the usual type, has been put in operation recently. Lights at each street intersection are controlled by an individual relay. These relays are arranged to operate consecutively, so that, in theory, the signals change progressively from "stop" to "go" as traffic proceeds along the principal thoroughfares. Checks made by the Chicago Surface Lines to determine the effect of this system on car operation have shown very favorable results. An article covering this installation and its method of operation appeared in ELECTRIC RAILWAY JOURNAL for March 27, page 536.

Prior to the installation of this system careful investigation and analysis were made by the Chicago Surface Lines of the movements of vehicles on the streets affected and on the intersecting streets. Unfortunately, the task of making such a comprehensive and accurate check of vehicular movement is difficult and expensive and seldom has been undertaken in the past. In most cases where synchronized signals have been installed the installation has been made after only a cursory examination of conditions and results have been disappointing.

Investigation has shown that traffic on comparatively few streets is sufficiently uniform over a considerable distance to permit efficient control by the usual type of



Traffic Tower at Market Street Which Controls Movement for ¾ Mile in Each Direction on Broad Street, Newark, N. J.

synchronized signals. Traffic on intersecting streets varies so greatly in amount that any arrangement which is satisfactory for one intersection is likely to be unsatisfactory for all the others. Time intervals must be arranged to meet the needs of the intersection having the heaviest traffic. Time allowed for cross traffic is then unnecessarily long elsewhere.

A typical case where the vehicular movement at one cross street is much heavier than at any other nearby intersection is shown in an accompanying traffic flow diagram of a busy one-way street. At the busiest intersection there is a cross movement of nearly 3,000 vehicles per hour, while the second heaviest intersecting street has a cross movement of not much more than half that number. Consequently the maximum intersection requires about twice the period needed for cross movement at any other point.

When all or nearly all of the vehicles move for a long distance on the principal thoroughfare passing by the heaviest intersection it has sometimes been found advantageous to hold vehicles at more remote intersections rather than to allow them to pile up at the point of maximum cross traffic. The usual situation, however, is that many vehicles turn off into side streets before reaching the heaviest intersection. The waits caused by synchronized control constitute an unnecessary loss of time to such vehicles. Examination of the traffic flow diagram already referred to shows that the total number of vehicles turning off into side streets is much larger than the number which continue past the controlling point. Under these circumstances there is no danger of piling up traffic at that point and more expeditious movement is possible without synchronized signals than with them.

Another accompanying traffic flow diagram shows the movement of vehicles along a section of Marietta Street, Atlanta, Ga. These figures were compiled by the Beeler Organization during its study of the transportation situation in that city. Conditions are entirely dissimilar at every one of the intersections shown and it is obvious that synchronized traffic control could not be operated efficiently in these circumstances. Traffic on this street, however, is fairly representative of traffic on many streets in the business district of American cities. Consideration of these various factors, therefore, indicates that the installation of the usual type of synchronized traffic control is unlikely to result in an increase in the speed of vehicular movement.

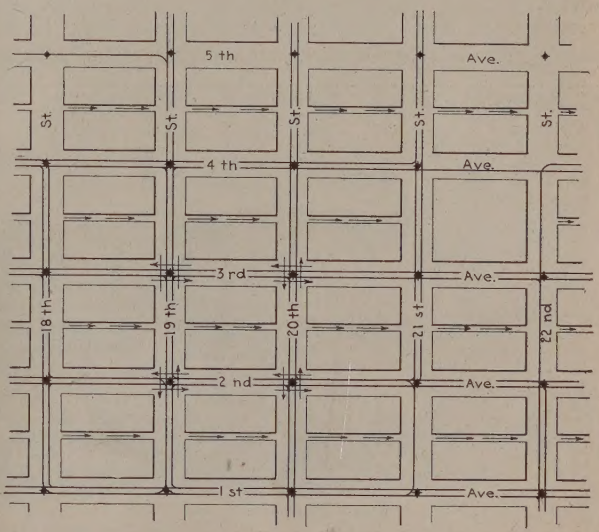
SYNCHRONIZED SIGNALS NO ADVANTAGE FROM SAFETY STANDPOINT

The second claim usually made in behalf of synchronized traffic control is that it reduces accidents. There are almost no authentic statistical data to show the effect of signal installations on accidents because few, if any, cities have kept records in a manner to yield such data. It has been stated that accidents on Michigan Avenue, Chicago, within the limits covered by the initial traffic signal installations a couple of years ago, have been materially less than before that installation. Similar opinions have been expressed in other cities that have tried this type of regulation, but actual figures to permit reaching definite conclusions are lacking.

The National Safety Council recently made a special study of conditions in some of the larger cities of this country. One of these cities was Philadelphia, which has a low automobile accident rate. It was the judgment of the engineers who made this survey that effective traffic control was the outstanding factor in reducing accidents in Philadelphia. Both automatic signals and traffic officers are employed and the investigators decided that from the safety standpoint there is little to choose between the two methods of regulation.

That synchronized control reduces the number of traffic policemen required is the third contention of its advocates. This has been accomplished in many instances because pedestrians and automobile drivers as soon as they become accustomed to the working of the system follow its indications without supervision by the police.

Despite the disadvantages of the ordinary synchronized system resulting from the difference in conditions at various street intersections some sort of supervisory control appears to be needed to prevent the confusion which arises when traffic officers at adjacent intersections fail to co-operate properly. A flexible



Layout of Synchronized Signal System in Birmingham, Where 24 Intersections Are Controlled from a Tower at Third Avenue and Twentieth Street

system of traffic control was tried by Gen. Smedley Butler when he was safety director of the city of Philadelphia. Under this scheme the movement of all traffic on Broad and Market Streets was governed by the indication of powerful lights located high up on the four sides of the City Hall tower. As these lights could be seen only by the drivers of vehicles approaching the City Hall it was necessary to retain practically the same number of traffic policemen as had previously been employed. The lights were used primarily to guide the policemen and the drivers of vehicles looked to them for direction. This made it possible for each officer to exercise a certain amount of discretion in controlling traffic at his particular intersection. Regardless of the signal indications, east and west traffic could be allowed to move when there was no north and south traffic, and vice versa. Unnecessary delays due to unequal volumes of traffic on the various cross streets were thus much reduced.

The chief fault of this plan was its failure to give proper information to vehicles going away from the City Hall and to vehicles on cross streets. Not every intersection had a traffic policeman and this lack created much confusion at such points. After a short trial the plan was abandoned in Philadelphia. As sufficient

time had not been allowed to demonstrate its possibilities nor to iron out the difficulties connected with its operation, this abandonment can hardly be considered a condemnation of the system. Since then many synchronized sections have been installed.

Signal lights were installed recently on Sixteenth Street, Washington, D. C., according to a plan somewhat similar to that being tried in Chicago. This is a wide boulevard without street cars. At first the signals were synchronized and various timing arrangements were tried out. Crossing this boulevard at right angles is Massachusetts Avenue, another heavily traveled thoroughfare. The difficulty experienced with the synchronized system was that when the lights were set to show green on Sixteenth Street for a sufficient time to permit vehicles to travel any appreciable distance the interval was too long for Massachusetts Avenue, with the result that considerable congestion occurred. On all other cross streets it worked out very satisfactorily.

After various experiments local authorities have developed what they term a "staggered system." This system ties the lights up into two-block series. Starting at the beginning of the street, the first two blocks are green, the second two blocks red, the third two blocks green, and so on. These lights are timed on dry days for 30 seconds and on wet or snowy days for 35 and 40 seconds. An automobile starting at the beginning of the green and traveling at a 22-mile rate of speed (the regular limit) completes the first two blocks just in time for the second two to turn from red to green, and so on through the entire length of the street, making it possible to travel the entire length of Sixteenth Street without stopping and without interference from cross-town travel.

By this system the speed of the vehicle can be controlled. That is to say, by lowering the time of the lights the speed can be increased, and by increasing the time of the lights the speed can be decreased. The result has been almost universal public approval of this system, while only a few weeks previously, under the synchronized system, the public was thoroughly disgusted with traffic lights.

Summarizing the experience of the various cities mentioned in preceding paragraphs, it appears that there are four general requirements for a successful traffic control system: (1) To adapt the system to the needs of the particular local situation; (2) to confine the control to such locations as are seriously congested; (3) to establish interlocking control only at intersections where conditions are similar; (4) to employ a sufficient number of traffic policemen to supplement the working of the mechanical signals by human intelligence, and to allow them wide discretionary powers to give the system flexibility.

Grand Rapids Enlists Support of Boy Scouts

IN AN effort to establish new public relation contacts with local organizations, the Grand Rapids Railway has just inaugurated a new scheme in conjunction with its original car-naming plan. L. J. DeLamarter, general manager of the railway, is experimenting with the plan of adopting organization names that will have far-reaching favorable reactions from the various groups within the city. Previously the names of prominent citizens had been adopted to replace the old style number system.

On Feb. 14, in response to requests from the local council of the Boy Scouts that a car be painted in their colors, bear their insignia and be known as a "Boy Scout car," Mr. DeLamarter adopted this suggestion and presented the boys with a beautifully painted car. Officers of all branches of boy scout work in Grand Rapids responded to the action and, after much publicity, dedicated the new car with special exercises on Saturday afternoon, Feb. 14.

Presentation of Boy Scout Car by General Manager DeLamarter

Resplendent in red, white and blue paint, with the scout insignia done in colors on the side panels, the car was placed on the Pantlind Hotel siding and a public inspection held. Representatives of all the scout troops in town were on hand and Mr. DeLamarter made a presentation address, which was responded to by John M. Brower, president of the Scout Executive Council. The exercises were concluded with three rousing cheers given by the boys for the railway company at the request of Fred B. Pantlind, head of the Sea Scouts, whose boys will share in the use of the car. After the exercises, the boy scouts were taken on a ride about the city in their new car. It is planned to place the car at the disposal of the scouts on all special occasions.

The Grand Rapids Railway has been receiving many letters of commendation for the new car and parents of boy scouts are sending letters in daily telling how their boys are standing at attention as the new car goes by.

Wide Gaging 4,762 Ft. of Double Track in New Orleans

By E. S. Meyers
Superintendent Way and Structures New Orleans Public Service, Inc.

This Length of Track Was Changed from 4-Ft. 8½-In. Gage to 5-Ft. 2-In. Gage in One Night, so as Not to Delay Traffic—It Forms Part of the Work of Having Only One Track Gage for the New Orleans Public Service Lines

Flashlight Photograph of Overnight Changeover of the Tracks from Standard to Wide Gage on Magazine Street and Jackson Avenue, New Orleans

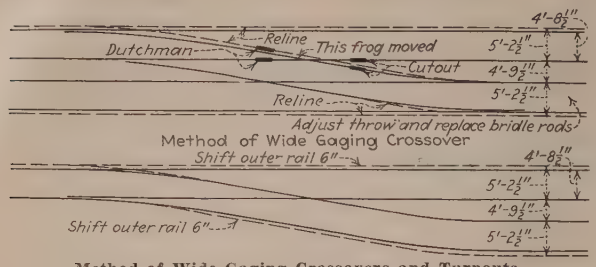
YEARS ago, when cars were first introduced in New Orleans, it was the prevailing custom to grant a franchise for a car line to the highest bidder. Several companies entered the field, and as time wore on there were as many as eight separate companies operating car lines. As each company was independent no thought was given to a systematic scheme of car routing. The first company to lay its tracks adopted the standard gage 4 ft. 8½ in., and the other companies adopted the wide gage of 5 ft. 2½ in. As a result, when the companies were merged and the New Orleans Public Service, Inc., took over the holdings it was confronted with the problem of rearranging the entire system, and therefore determined on a policy of using only one track gage to permit flexible operation of the cars. Fortunately, out of a total track mileage of 220.48, only 28.48 miles was of the 4-ft. 8½-in. gage. Approximately 2 miles was double gage; that is to say, it had three rails to permit the use of either gage of car. All of the remaining track was of 5-ft. 2½-in. gage.

In the latter part of 1925 extensions were built in order to reroute certain car lines. The rerouting involved the Jackson line, which operated on the 4-ft. 8½-in. gage track. Since the extensions were wide gage, the rerouting necessitated wide gaging 4,762 ft. of double track. This it was decided to do in one night, and the night of Wednesday, Oct. 28, was the one selected.

The accompanying map shows the section of track on which the gage had to be widened. As will be seen, before the widening of gage was done, the cars on the Jackson Avenue line turned into Jackson Avenue at St. Charles Avenue, where there was a layout consisting of a double branch-off 4-ft. 8½-in. curve. The double track then extended on Jackson Avenue a distance of about 4,800 ft., crossing two double street car tracks and four single car tracks. At the end of the line there was a turnout, and midway on Jackson Avenue there was one crossover. The rerouting necessitated changing the car housing, and in order to do this, a connected curve branch-off was required at Magazine Street. All of the intersections were paved.

The problems which confronted us in making this change were as follows:

1. Wide-gaging the trucks of a sufficient number of cars to operate the new line.
2. Maintaining the paved roadways for vehicular traffic.
3. Maintaining the operation of the car lines crossing Jackson Avenue, four in number.
4. Wide-gaging the track and special work in one night.



Method of Wide-Gaging Crossovers and Turnouts

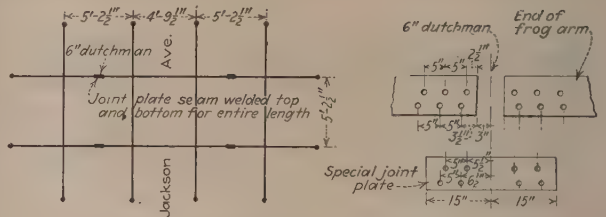
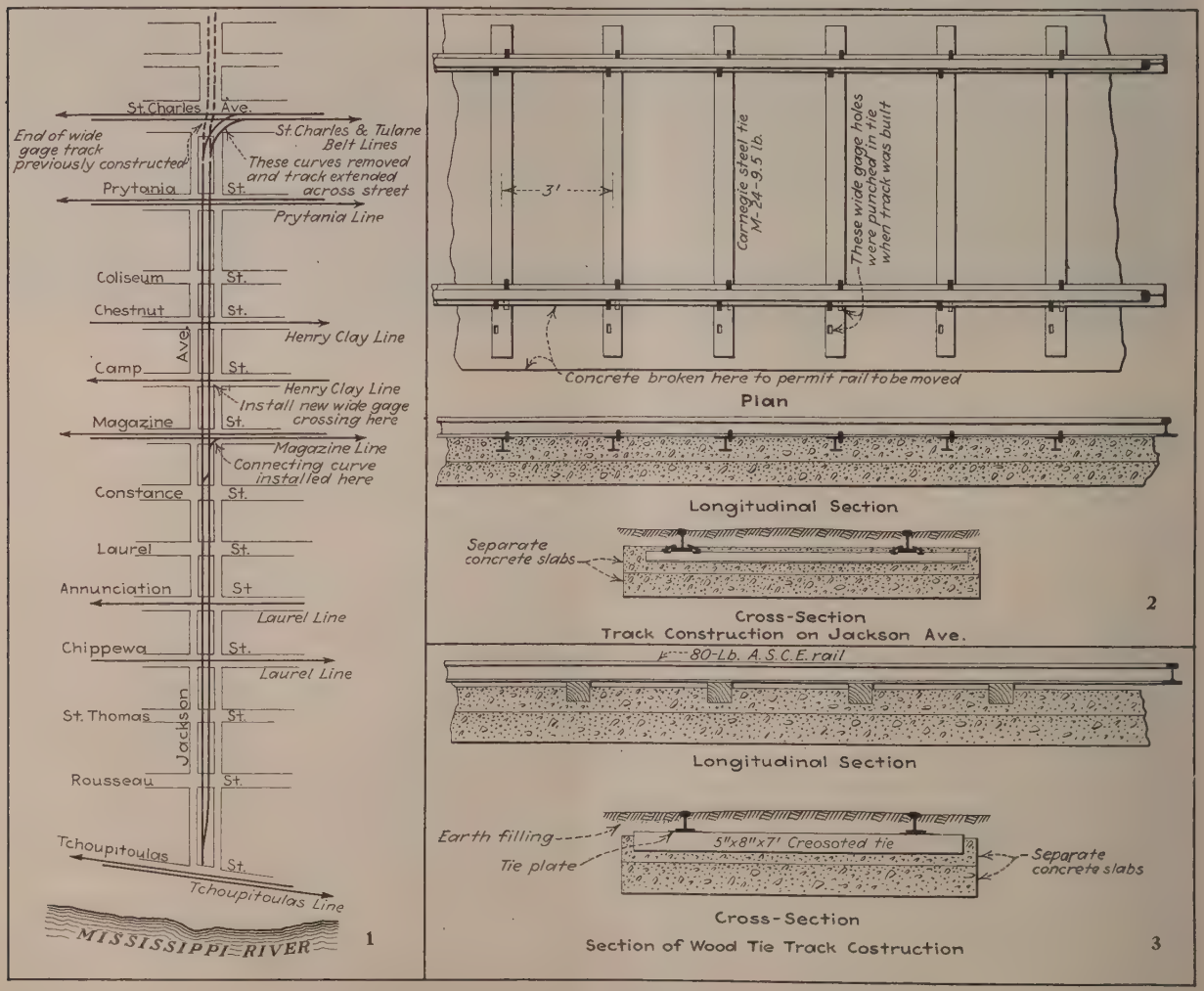


Diagram Showing Method of Wide-Gaging a Crossing

The equipment department took care of wide-gaging the trucks, while the roadway department handled the remaining work. The traffic situation was studied and a plan was worked out showing the manner in which traffic could be diverted without much inconvenience to the public. Six police officers were required to handle the traffic situation. The plan was submitted to the Department of Public Safety, which co-operated with us and carried it out during the period of wide-gaging.

Arrangements were made with the transportation department in regard to the time in which the track could be taken over by the roadway department, and also the manner in which the lines crossing Jackson Avenue could be rerouted, during the period the crossings were being wide-gaged. The roadway department estimated that the work could be done in six hours, but taking into account the possibility of inclement weather, it asked for eight hours. As the transportation department desired to operate the new line at 5 a.m. the following morning, the roadway department asked for the track at 9 p.m. On this basis, the Jackson line was cut at 9 p.m. and the track turned over to the roadway department for wide-gaging.

The work started as planned at 9 p.m. The Prytania Street cars were diverted to the Magazine line, while these double-track crossings were being wide-gaged and vehicular traffic was diverted from one intersection to the next. At 10 p.m. the Prytania Street crossings were wide-gaged and turned over for operation. The Henry Clay-Coliseum line was routed over the Magazine line and the Laurel line was routed over the Tchoupi-



The Line Wide-Gaged Used Both Steel Tie and Wood Tie Construction

No. 1. Section changed to wide gage. The work involved wide-gaging 4,762 ft. of route, wide-gaging fifteen crossings, one crossover and one turnout, installing one new crossing, removing one branch-off (at St. Charles Avenue) and connecting straight track at this point. No. 2. Track construction on Jackson Avenue. No. 3. Section of wood-tie track construction.

One Gang Shifting the Rails at the Crossing of St. Charles and Jackson Avenues During Changeover from Standard to Wide Gage

Tearing Up Track Preparatory to Shifting Tracks During the Overnight Changeover from Standard to Wide Gage at the Intersection of Coliseum Street and Jackson Avenue

toulas line, to permit the wide-gaging of these crossings. These crossings were completed by 11 p.m., after which the lines resumed their regular routings. The Magazine line was next rerouted over the Henry Clay-Coliseum line, and the double crossings at this intersection were wide-gaged by about 12.15 a.m. A portion of the curve on Magazine Street was installed a few days prior to wide-gaging, and by 10 p.m. this curve was connected up to the Jackson Avenue track.

As the crossings were being wide-gaged separate track forces were wide-gaging the tracks. The split switch crossover and the turnout were wide-gaged in less than one hour. The entire track was wide-gaged at 1:30 a.m., but it was 2:15 a.m. before a car could go over the line, due to some delay in connecting up at St. Charles Avenue.

Details of Program

The track which was wide-gaged was a double track 4,762 ft. long, equivalent to 9,524 ft. of single track, and was located in a reservation in the middle of the street, known in New Orleans as "neutral ground." All intersections, which occurred at every cross street, were paved with either wood or granite block. The rails were 80-lb. A.S.C.E. Of this stretch, 887 ft. was laid on Carnegie steel ties, imbedded in concrete, as shown in one of the track sections on the opposite page. The remaining portion of the line was constructed of wooden ties imbedded in concrete, as shown in the lower track section.

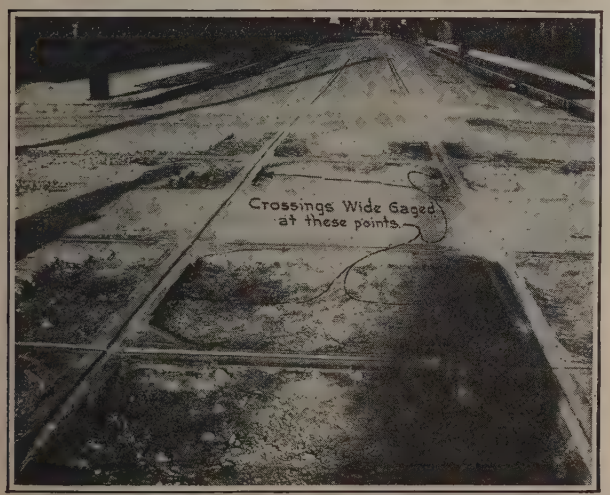
The details of the method and program of wide-gaging were thoroughly studied and worked out in advance after a series of first-hand inspections had been made and information tabulated from records on file. Detail drawings of the work to be done were prepared. Every precaution was exercised to avoid last-minute changes in the program. Track foremen were organized into groups, and each foreman was assigned a certain amount of work and a certain number of men with which to do it. The foremen had both oral and written instructions and then were taken to the job and made acquainted with the work required of them.

Preparatory Work

The preparatory work consisted of excavating a strip along the outside rails, extending to the end of the tie on both tracks along the entire length of the neutral ground. Where the track crossed paved intersections the pavement was broken for about a foot in width and refilled with slag to allow the passage of vehicles.

The crossings were treated in the same manner, all concrete being removed to the level of the ties and refilled with slag.

The day prior to the wide-gaging, all the rails which



Method of Wide-Gaging Crossings on Jackson Avenue. These Two Views, Taken After the Work Was Done, Show Where the Crossings Were Widened and Where the "Dutchmen" Were Inserted

were connected to the arms of crossings were cut 6 in. by an acetylene torch and rebolted with the same plates, each piece cut being used temporarily as a "dutchman."

The steel tie track presented a rather difficult problem as the rails were fastened to the ties by a combination clip and bolt. Matters were somewhat simplified by the fact that the steel ties, which were of the I-beam type, had been punched when originally installed to receive clips that would hold the rail to 5-ft. 2½-in. gage. The old bolts and clips, except on every third tie, were removed. This was done by placing a cold chisel against the bolt head and striking it about six times with a heavy maul. Since the concrete was about an inch higher than the top of the steel tie, it was also necessary to cut this level with the top of the tie to permit the rail to slide over and rest on the tie. To permit the insertion of the bolts and clips in the new holes a small amount of the concrete had to be cut at every hole. A sufficient amount of new clips and bolts were purchased in advance, and these were inserted in the outer wide gage holes and left loose.

The Work of Wide-Gaging

Everything being ready, the work of wide-gaging began. First, the crossings received attention. These were wide-gaged by removing the "dutchman" previously cut off of the connecting rails, so as to leave the crossing arms free, and then spreading the crossings by the use of two jacks. To do this, the jacks were laid in a horizontal position, one end resting against the rail to be spread and the other end blocked against the devil strip rail. The jacks were then "pumped" until half of the crossing had attained the new gage. The new "dutchman" was inserted in the opening and the new long plates were fastened in place. As it was necessary to cut off 6 in. of the rails connected to the crossings, new holes had to be burned in all the connecting rails to fit the fish plates. This was done by the use of acetylene torches on the night of wide-gaging.

As the crossings were being wide-gaged the rails were spread over 6 in. and properly gaged up. All ties were spiked. In the stretch of steel ties the remaining clips were removed. When the rail was thrown over, the weight of the rail caused it to wedge under the new clip which had previously been placed in the outer hole. After the track was gaged up the inside clips were placed and fastened.

The crossover was wide-gaged by making cuts, previously calculated, from joints at the heel of the frog on the main and cross lines and moving the frog along the main line the proper distance. The pieces cut were then dropped in the joints at the toe of the frog to fill the gap. Only one frog was moved. It was then necessary to reline one rail on each end of the crossover by gaging it to the rail that had not been moved. The throws and bridle rods at each end were then readjusted to fit the 5-ft. 2½-in. gage. The process followed with the crossover is shown in a diagram.

The gage of the turnout at the end of the line was changed by simply relining the rails. This caused the outside switch points to be drawn back toward the frog, but the distance was negligible so far as car operation was concerned. As in the case of the crossover, the throws and bridle rods had to be readjusted to the 5-ft. 2½-in gage.

At Magazine Street, where there was a double-track crossing, the connecting curve had previously been installed, except for the turnout on the Jackson Avenue line. This curve had been installed on an 8-in. slab that was poured ten days in advance in order to attain the proper strength before it had to be used. The portion of the Jackson Avenue line where the new special work was to be located had been placed on I-beams to allow the slab to be poured under the track while cars were using it. On the night of wide-gaging, this turnout was installed and the standard gage rail drawn out to meet it.

The new wide gage track for the new route of the line had been brought up to St. Charles Avenue, the street at which the standard gage track turned. The portion of these curves which lay over the new line was excavated and placed on I-beams so that an 8-in. slab for the new line could be poured in advance. At the same time the slab across St. Charles Avenue along the new route was poured. In order not to interfere with vehicular traffic, which is very heavy at this point, the slab was poured with Lumnite cement half way across the street and then immediately bridged with 4-in x 12-in. planks in such a way that there was no weight on the slab. The other half of the street was then excavated and the slab poured. When this slab had attained its proper strength the I-beams under the curves were removed and the track let down on it. On the night of rerouting the old curves were removed by being cut with acetylene torches and the new rail was laid to connect to the new wide-gage track. These rails were immediately brought to the proper line and surfaced on slag. The following morning the track at this intersection was paved with Kentucky rock asphalt, on top of slag. One half of the roadway was paved at a time, so as not to interrupt traffic.

The force consisted of ten foremen, 200 laborers and three acetylene cutters. The equipment consisted of oxyacetylene tanks mounted on motorcycles, a Universal crane mounted on an electric truck, a Brownhoist mounted on a motor car and Differential bottom dump work trains for handling slag. Light clusters were suspended from the trolley wire along the entire length of track.

Improved Tracks in Atlanta

MORE than $600,000 was spent by the Georgia Railway & Power Company in track maintenance and improvements in Atlanta during 1925. Among the heaviest items were the following:

New and rebuilt tracks	$303,000
Track maintenance and repair	145,000
New paving	100,000
Building construction and maintenance	27,000
Cleaning and sanding tracks	25,000
Paving maintenance	10,000
Signal maintenance	6,000

Twelve major track and paving jobs were carrried through during the year, at a cost of more than $345,000. Double-tracking of the River line was the most important job, costing $76,000. Other expensive undertakings were rebuilding and special work on Ponce de Leon Avenue, costing $76,000; double-tracking McDaniel Street, at a cost of $46,000; double-tracking and rebuilding the Soldiers' Home line, at a cost of $42,000, and new track on Mitchell Street, constructed at a cost of $27,000.

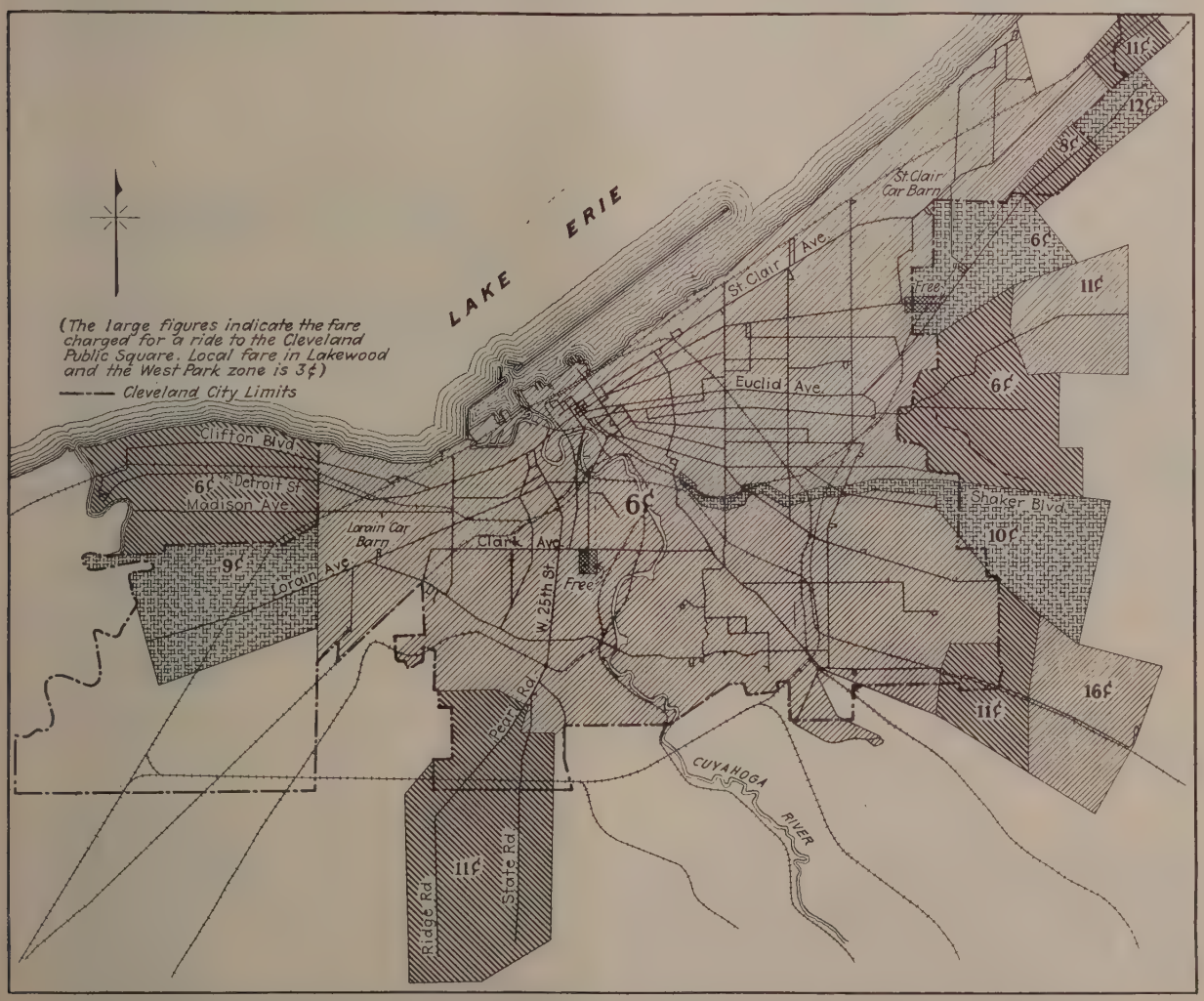
The track department's maintenance account showed a decrease of $34,745, or 18.084 per cent, under the expenditures for 1924.

Readjustment Necessary in Cleveland's Tayler Grant

Recent Report of the Greater Cleveland Transportation Committee Recommends Removal of Limitations to Increase Market Price of the Common Stock to Par—Present Operation by Company Is Commended—Construction of Subways Should Be Deferred

CERTAIN difficulties have arisen in recent years in the operation of the Cleveland Railway under the provisions of the Tayler grant, which first became effective March 1, 1910. Most important of these has been the question of providing new money since the close of the war. The natural provision for financing has been through the sale of additional blocks of common stock, which, according to the Tayler grant, must be sold at par. The dividend rate is likewise limited to 6 per cent. While there has been ample investment money available in recent years, market conditions have been such that the Cleveland Railway common stock could not be sold at par, thereby effectively cutting off the source of new money in this natural channel. During the past five years the Cleveland Railway has expended more than $5,000,000 for new property, about one-half of which was provided by special allowances and the other half through the operation of the regular maintenance allowance for replacing equipment. The special allowances were made available from authorizations by the city to pay for the new property as a replacement of older property regarded as obsolete.

Such practices are regarded by the Greater Cleveland Transportation Committee as "financing through the fare box." This committee, whose report was released late last year, was appointed under the authority of a resolution of the metropolitan council and consisted of



Transportation Committee Decries the Present Inequality of Fares of the Cleveland Railway and Recommends Local Changes that Are Estimated to Increase Gross Revenue $1,000,000 Annually. The Present Fares to and from the Public Square Are Shown on the Map

three members of the Cleveland City Council and representatives of Cleveland Heights, the East Cleveland Commission and the city of Lakewood. This committee was instructed to study the entire metropolitan transportation situation and has divided its report into seven sections, abstracted in the following paragraphs:

The Transportation Situation

All service, according to the report, must be unified and must be under public regulation and control. The importance of this principle was evidenced by the vigorous action of the city of Cleveland and suburban cities surrounding it, resulting in the repeal of legislation which had placed the control of bus operation in the streets of Greater Cleveland under the State Public Utilities Commission.

The report decries as a folly a recent movement to grant outside interests a bus franchise. From the testimony offered in the public hearings held by this committee several outstanding facts were established. C. J. Spencer, general manager of the Metropolitan Electric Tramways, Ltd., of London, England, said:

> The answer purely on the ground of commercial possibility to the man who suggests that street cars ought to be scrapped or could be scrapped is that the first result of that scrapping would be that you would have to pay a great deal more in fares than you do today.

At the same meeting Alderman Smithson of Leeds, England, reported that after visiting many cities and observing bus and electric car operation the tramways committee of Leeds had decided to recommend an expenditure of $2,500,000 on the city's electric car equipment.

C. E. Smith, consulting engineer for the special survey committee of the St. Louis Board of Aldermen, stated in open hearing that the motor bus does not give faster service and is more expensive for hauling masses of people. He said: "If it were possible to use only buses, the total transportation cost of Cleveland would jump from $17,000,000 annually to $30,000,000. This would mean an increase in fare. There would also be the problem of much greater congestion on the streets because of the large number of buses required."

In order better to inform the riders of Cleveland on transportation matters and to promote the good will of the community the committee recommends that a public relations department be established by the company.

Traffic Congestion

The increasing use of automobiles, equaling 17 per cent annually, and the consequent increase in the number of machines entering the central congested area of the city, the committee thinks, may provide its own remedy in the lack of ability to park if not to operate. Street congestion is an inevitable feature of city life. So far as the city of Cleveland is concerned, it is gratifying to know the subject is receiving earnest consideration, through the opening of new traffic arteries.

The Tayler Grant

Conclusion is reached by the committee that the Tayler grant probably represents the most important step that has ever been taken toward reconciling the demands of the populace for adequate transportation service with a natural desire for profits by those who undertake to furnish such service. The Cleveland Railway, through its stockholders, owns the physical property. The routing and frequency of cars, construction of extensions and betterments are directed by the city. Stockholders are entitled to an interest or dividend return of 6 per cent, no more and no less. To obtain this, provision is made for the fluctuation of fare, determined by the rise or fall of a stabilizing fund. If by expiration of time the life of the grant should be reduced to less than fifteen years, then the railway company has the right to charge a maximum rate of fare and the city loses control over the service.

Through the operations under this grant the physical property has been maintained in first class condition. The company today is sound and solvent, the stockholders have received 6 per cent return on the par value of their investment without interruption, and the present rate of fare in Cleveland is 6 cents (5 5/9 cents if tickets are purchased).

While the city does not guarantee the return on the stock, it is in effect insured, and in case the city should exercise its right to purchase, the stock is callable at 110.

As described before, the operation of the grant is defective today in the provision of new money. John J. Stanley, president of the Cleveland Railway, contends that the root of the trouble lies in the 6 per cent limitation of the dividend rate and that 7 per cent would place the market value of the stock at par and hence solve the present difficulty.

In view of other testimony given at the many hearings the committee does not agree with the suggestion of raising the dividend rate, but in its stead makes the following recommendations, which in its opinion will produce a market value of par:

First—Extend the life of the grant to 1950 (it now expires in 1944).

Second—Amend Section 21 to provide that the rate of fare shall be such that, after deducting operating, maintenance and other allowances specified in the grant, will enable the company to pay 6 per cent interest on its "invested capital."

Third—Raise the "interest fund" originally fixed by Judge Tayler at $500,000, so that the rate of fare will be increased when the fund is depleted to $500,000 and shall not decrease until it reaches $1,100,000. This recommendation is made because the gross earnings of the company are double what they were when the Tayler grant was drafted.

Fourth—To rectify what appears as a defect in the grant, allow the company to pay a commission not exceeding 2 per cent for the selling of new stock.

Fifth—The grant provides that the railway company can charge the maximum rate of fare when the unexpired term of the grant shall be less than fifteen years. The committee recommends that the company at such time be allowed to create a stock retirement fund by charging an additional ½ cent per car ride and 1 cent per motor coach ride, exclusive of transfers. The fund so created would be held in trust to amortize the capital value of the company. This provision is regarded by the committee as practically insuring the permanency of the grant or the return of the capital invested.

Sixth—The committee recommends that the company start to set aside, as an annual sinking fund, 1½ per cent of the gross income received.

Service at Cost

While the committee states that any attempt to provide service at cost for the individual car rider must be at best an approximation, it decries as preposterous that there should be nine different rates of fare now in force in the metropolitan area. The map reproduced shows that some passengers are carried as much as 9 miles in the city limits for the regular fare, while others also within the city limits are being charged 11 cents for a 4½-mile ride. The committee proceeds to

make several concrete suggestions of local fare adjustment which it calculates will produce $1,000,000 additional revenue annually.

Operating Economies

Under the service-at-cost principle of the Tayler grant all economies operate for the benefit of the car riders rather than the stockholders. "This so-called lack of incentive for economical operation has received more criticism than any other feature of the grant." The committee has endeavored to develop information that would prove or disprove this criticism and states that no evidence has been presented to it that would justify such criticism.

There is one factor, however, in the cost of operating that makes Cleveland appear in a somewhat unfavorable position. Comparison with other city systems of comparable size indicates that Cleveland is paying a larger amount in the settlement of personal injury claims than five other companies. The cities cited in comparison are St. Louis, 6.83 per cent; Cleveland, 6.7 per cent; Detroit, 3.46 per cent; Pittsburgh, 3.27 per cent; Baltimore, 3.21 per cent; Philadelphia, 3 per cent; Cincinnati, 2.06 per cent.

While recognizing the rights of claimants to receive just and adequate compensation, the fact might well be emphasized that it is the car riders who pay, whether the amount of the jury's award be high or low. The committee was advised that this unfavorable comparison to other cities was not peculiar to the Cleveland Railway alone, but applies to the steam roads and industrial concerns operating in the city of Cleveland and vicinity.

Several other specific operating economies are being made by the company and were reported by the city street railroad commissioner. The installation of watt-hour meters on all motor cars is estimated to save 10 per cent of the energy consumption, totaling $75,000 per year. A simplified form of transfer slip will enable conductors to handle fares more effectively. Adjustment of service to meet seasonal changes in traffic has been more closely scrutinized than in the past. Rerouting of cars on certain west side lines is estimated to save $75,000 a year. Substitution of motor coaches for street cars on three lean routes will reduce the present deficit of $249,000 and may result in profitable operation.

Rapid Transit

In 1919 a rapid transit commission made a report based upon a survey by the firm of Parsons, Klapp, Brinckerhoff & Douglas, recommending the immediate construction of a subway from the Public Square under Euclid Avenue to East 22d Street, Superior Avenue to East Twelfth Street, Ontario Street to the market house, and extending the present west side subway under Superior Avenue to the Public Square. This was estimated at $15,000,000, but now the committee believes the cost would be almost double. In 1919 the question was submitted to the voters of Cleveland and defeated by a decisive margin.

While the committee states that it is possible to build subways in Cleveland, there are some unfavorable conditions that may increase the cost and the question is one of financing.

The Van Sweringen plans for certain additions to rapid transit have not yet been completed. For this reason, and on account of the high cost involved, the committee recommends that subway construction be deferred at least until these local plans have been formulated more definitely.

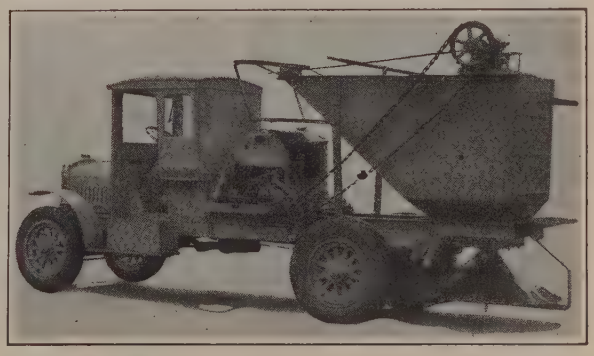
Metropolitan Transportation Board

Because there appears to be no existing agency which is in position to consider from a co-ordinating point of view the many problems of passenger transportation in the Cleveland metropolitan area the committee recommends the formation of a permanent transportation board; the functions of the board would be advisory only; it would hold regular and frequent meetings, and would be certain to develop valuable suggestions and recommendations to the public authorities.

Some of the questions to which the board would direct its attention are betterment of street car service, the most effective co-ordination of street car and motor coach service, the future financing of betterments and extensions by the Cleveland Railway, co-operation among the four municipalities and, lastly, rapid transit lines.

Automatic Sand Spreader Proves Economical

ONE of the problems of bus operation, securing traction on slippery pavement, has been solved by the Public Service Transportation Company, a subsidiary of Public Service Railway, Newark, N. J., by the construction of an automatic sand spreader. In the past it has been the practice of this company to spread sand liberally on grades and asphalt-surfaced roads in wet weather. This spreading was done by hand, and while the method proved satisfactory enough, the labor expense was considerable. Recently two old bus chassis were rehabilitated and equipped with power-operated



Old Bus Chassis Converted by Public Service Transportation Company Into a Machine to Spread Sand on Slippery Pavements

sand spreaders. A large bin on the rear part of the body carries the sand. From this bin it is fed down upon a revolving cone mounted below the truck frame. The design is a combination of that of the Public Service Transportation Company and Haiss Company engineers. A separate power plant is used to drive the spreader. This has been found to be more efficient and economical, as the speed of the cone would otherwise be entirely dependent upon the speed of the vehicle. With separate drive, however, it is possible to govern more closely the amount of sand distributed. Two vehicles of this type have been built and are now in use, one on the North Hudson bus routes at Weehawken and the second at Paterson.

An Exchange of Bridges Takes Place in the Beaver Valley

BECAUSE of the desire of the Pennsylvania Railroad to reconstruct its main line between Pittsburgh and Cleveland, in order to avoid passing through the center of New Brighton, and to eliminate some grades, a new right-of-way was constructed. This involved the building of a new bridge crossing the Beaver Valley diagonally between Beaver and New Brighton.

As seen from the pictures, this new bridge involves the destruction of the old structure owned and operated by the Beaver Valley Traction Company and used by it jointly with highway traffic between the communities on either side of the Beaver River.

The pictures show the Pennsylvania Railroad bridge constructed up to the piers immediately on either side of the structures to be destroyed. On Sunday, March 14, the main line of the Beaver Valley Traction Company was cut at this point, connection being made by means of a temporary bus line between the boroughs of New Brighton and Beaver Falls, using the present highway bridge about 2,000 ft. upstream.

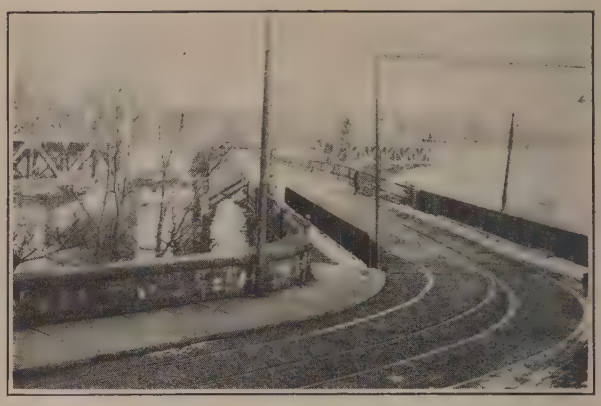
Upon completion of the new Pennsylvania Bridge and trackage circumventing New Brighton, the Pennsylvania Railroad will refloor the present railroad bridge and turn it over for the joint use of highway traffic and the trolley cars.

A very favorable contract was drawn up between the Pennsylvania Railroad and the Beaver Valley Traction Company, the intent of which was that the railroad company would protect and reimburse the Beaver Valley for all expense and losses occasioned by this change. It is estimated that four months will ensue before the cars can use the new route.

The first view shows the bridge situation on March 9, a few days previous to the close of traffic over it. The second, taken in the morning on March 15, shows the interfering spans stripped of all floor members preparatory to being dropped, while the last view, taken about noon of the same day, shows one end of the structure dropped. Shortly thereafter the other side was dropped. After this the construction of the closing span of the new Pennsylvania Railroad bridge progressed rapidly.

This exchange of bridges, when completed, will give better line and grade to the Pennsylvania Railroad, will effect a slightly improved operation for the Beaver Valley Traction Company and will remove forever the toll bridge that has been a landmark in that section of the country and substitute a free bridge for traffic over the river. An interesting sidelight on the situation will be what measure of success will be possible from the operation of the Beaver Valley Traction Company, cut in its middle and connected by buses.

In order to eliminate as far as possible the transfer of local passengers traveling in the zones on either side of the river, the connecting bus route extends from the center of New Brighton paralleling the present track, turning north near the river, crossing the highway bridge over the Beaver River and extending westward for seven blocks to Beaver Falls. Arrangements have been made to connect with all cars. A 10-cent cash fare with free transfers will be charged, except that street car passengers may make this connection with no additional cost, as all forms of street car transportation, including the weekly passes, will be honored, including free transfers to and from the connecting buses.



View No. 1—The Beaver Valley Traction toll bridge over the Beaver River, showing the shore spans erected for the new Pennsylvania Railroad bridge which will cross it at a diagonal. Beaver Valley Traction service and highway traffic were discontinued on Sunday, March 14.

View No. 2—The Beaver Valley Traction bridge stripped of floor members by Monday morning, March 15, and ready to be dropped into the river.

View No. 3—By noon on Monday, the 15th, one end of the interfering span had been dropped. Immediately thereafter the other end of the span was cut and work of completing the river span of the Pennsylvania Railroad bridge was continued.

Removing the Old Beaver Valley Bridge. While Awaiting the New One Passengers Will Be Handled by Buses

The change from rail to operation with the connecting bus line was made easily and without interruption, as indicated by the editorial in the Beaver Valley *News* of March 16, as follows:

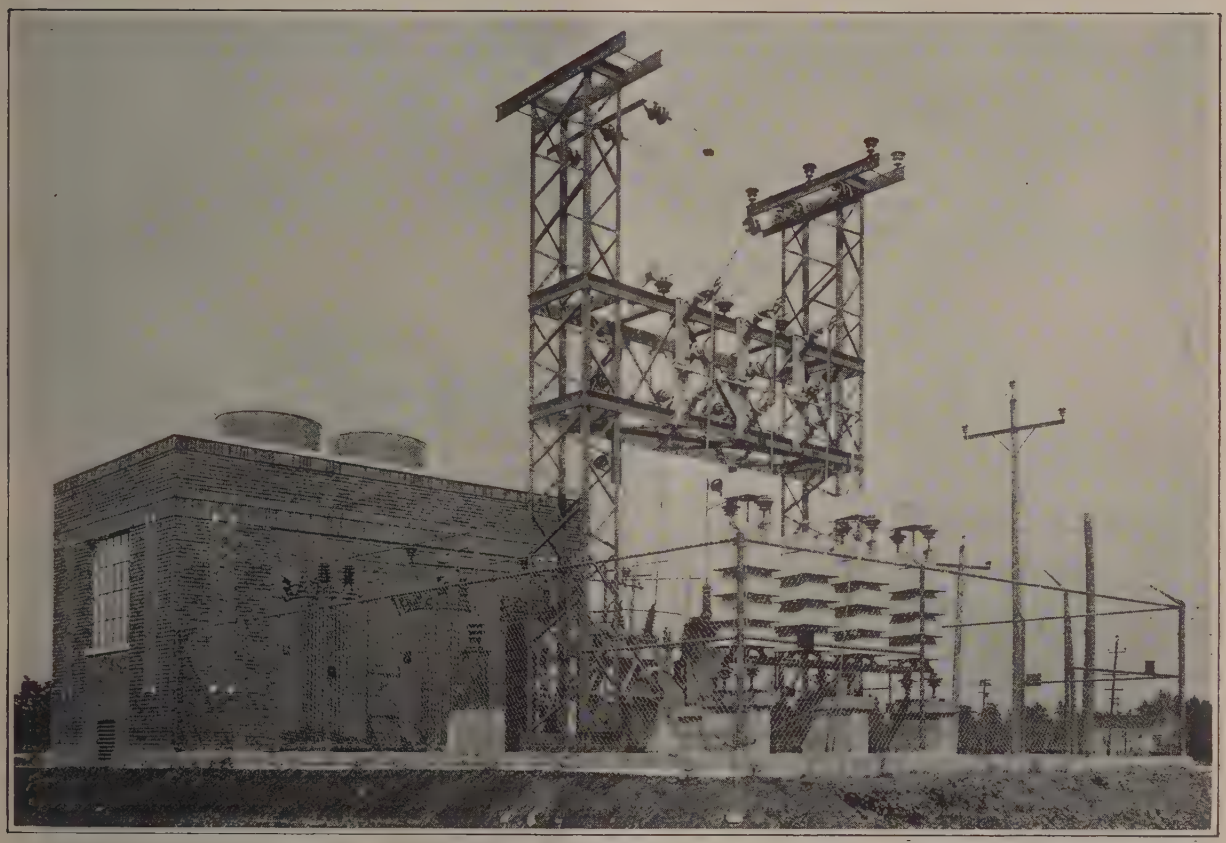
Congratulations

Patrons of the Beaver Valley Traction Company in the upper Beaver Valley are today profuse in their expressions of gratitude to the company for the admirable manner in which it is taking care of traffic during the bridge changes. The burden of transportation fell upon the traction company when the period came for dismantling the overgrade bridge to permit of the completion of the new Pennsylvania Lines bridge. With its usual foresight and capable management the traction company took hold of the problem and when the day arrived for action all was set. There were no hitches. Expense of equipment and man power was not considered. In brief, the company "delivered the goods." General Manager C. D. Smith and others of the management, and the car operators and coach drivers are alike to be congratulated.

From Receivership to Prosperity in Three Years

FOURTH ARTICLE

Substantial Savings Made in Cost of Power Generation on Chicago, Aurora & Elgin Railroad—Close Control of Heaters Has Reduced Maximum Demand—Three New Substations Built—Advantageous Contract Made with Public Service Company of Northern Illinois



New Automatic Substation at Bellwood. Outdoor Equipment Is Mounted on Pedestals to Avoid Trouble from Snow

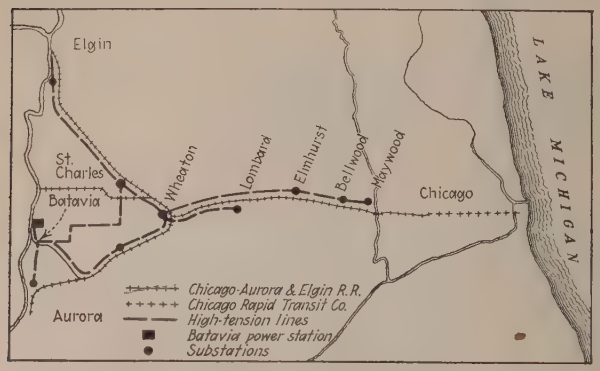
IMMEDIATELY upon assuming control of the Chicago, Aurora & Elgin Railroad, the new management engaged C. F. Hirshfeld, director of research of the Detroit Edison Company, to supervise and control the operation of its power plant and substations. After a thorough analysis of the problem, Professor Hirshfeld recommended changes and improvements in the power plant to increase the continuity of power supply and to reduce the cost of generation. As a result of the execution of this program substantial savings in the cost of power generation have been achieved.

One of the innovations introduced was an unusual method of reducing the central-station and substation demands and kilowatt-hour consumption during the rush-hour periods in the winter months. This railroad has for years used electric heaters in all passenger coaches, in consequence of which the kilowatt-hour consumption and maximum demand rise sharply during the cold winter months. To reduce the heater load without inconvenience to the passengers, men at certain designated stations turn on or off the heat on each train stopping at the station. By this system the control of the matter of heat is taken almost entirely out of the hands of the conductors and brakemen, particularly during the rush hours, and it is possible to make sure that not more than a predetermined number of car heaters will be in use in any given moment. It has been possible to keep the temperature of the cars at a comfortable point, even in most severe winter weather, with only about half the car heaters turned on at any given time. The interval, in minutes, during which heat is turned off is never very long for any particular train. Following this system has saved substantially 1,000 kw. in power demand and has greatly reduced the kilowatt-hour consumption during the winter months.

At the same time careful studies were made to deter-

mine the feasibility of cutting down motor loads in the car shops and elsewhere on the property during the rush hours. It was found that, without any reduction in shop efficiency or in the volume of output of the shops or loss through idle labor, it was possible materially to reduce motor loads during the rush-hour periods.

Short service from Chicago to Elmhurst in the rush hours has saved 750 kw. in the demand during the peak hours, 50,000 car-miles and 2,836,000 seat-miles per annum. It has made available for use in rush hour service some ten additional coaches, thereby effecting a saving in capital investment of approximately $330,000. This service, inaugurated in August, 1923, enables several trains at the beginning of the morning and evening rush-hour periods to be doubled back to Chicago in time to permit the same equipment to be used again.



High-Tension Transmission Line Layout of the Chicago, Aurora & Elgin Railroad

Three lines from the Batavia generating station serve the entire system. At Maywood there is a tie-in with the Chicago Rapid Transit System.

Distribution System Overhauled

While track reconstruction work was being done as told in this paper March 6 the entire electrical system was given a careful inspection and defective material removed. High-tension insulators were tested, and where it was necessary they were replaced. For testing high-tension insulators Western Electric 2,200-ohm radio receiving phones were used. One end of the set was connected to a steel peg on a wooden stick, while the other was connected to ground. The steel peg was then brought up against the crossarm at the insulator pin. With the line hot, any defects in the insulator were recorded by means of a buzzing in the test set.

High-tension supply lines have been so planned that a dual feed is provided for all substations between Wheaton and Lombard. One side of this looped high-tension system follows the right of way from Batavia to Batavia Junction on the Aurora line and thence to Wheaton, while the other cuts across country from the power plant at Batavia to Ingalton on the Elgin line, thence to Wheaton. From Wheaton to Lombard the two lines are carried on separate poles, a line on each side of the right-of-way. At Lombard both high-tension lines are connected through the substation. One line continues to Maywood substation, just west of the city limits of Chicago. The Aurora substation is fed by means of a direct high-tension line from the Batavia power house. A substation on the Elgin branch west of Ingalton is fed by means of a line cutting through the Ingalton station.

In addition to the high-tension lines for railway purposes, the company has high-tension lines supplying many of the small villages with power and light. These lines are not interconnected with the power lines of the railway system and hence have little or no effect upon the operation of the converting substations.

Conversion of the 26,400-volt, 25-cycle, three-phase current to 600-volt d.c. for the operation of the rolling stock is accomplished in eleven substations. The location, condition, capacity and operation of these stations are given in the following table:

Location	Condition	Capacity, Kw.	Operation
Aurora	Old	1,000	Manual
Warrenville	Old	500	Automatic
Wheaton	New	1,000	Automatic
Lombard	Old	1,500	Manual
Spring Road	Portable, old	500	(Automatic load limiting) Manual
Bellwood	New	1,000	Automatic
Maywood	Old	1,500	Manual
Maywood	New	500	Manual
Ingalton	Old	1,000	Manual
Clintonville	Old	1,000	Manual
Batavia	Old	500	Manual

There is a tie-in on the d.c. side of the Maywood substation to connect with the Chicago Rapid Transit System at Forest Park. Disconnect switches and meters on the d.c. 600-volt side are located at Laramie Avenue,

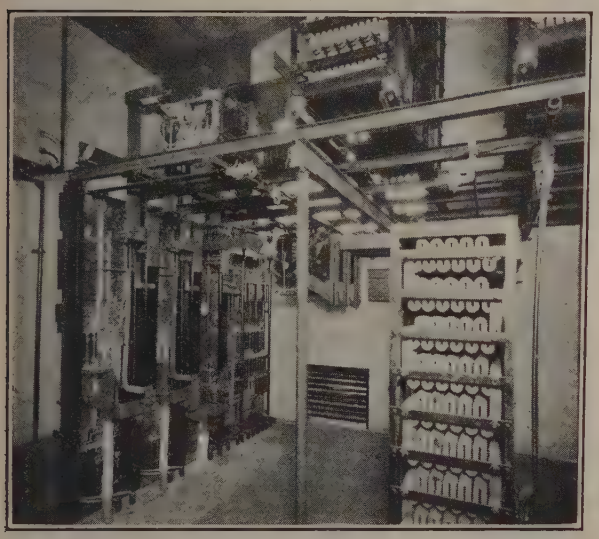
Details of Electrical Distribution System on the Aurora-Elgin Line

At the left, the standard type of pothead, feeder or jumper connection to the trolley rail. The 1,500,000-circ.mil Kerite cable is incased in a concrete block and the connection between this cable and the three 500,000-circ.mil flexible bonds covered by a concrete removable cap. These bonds are fastened to the base of the trolley rail by a plug terminal. Note in this illustration the drop rail at crossovers and switchpoints to permit the trolley shoe picking up and breaking contact. This type is used in place of inclines quite extensively on the Chicago, Aurora & Elgin Railroad and has proved satisfactory.

At the right, weld terminal copper bonds are used around crossovers and frogs for return circuits.

where the Chicago, Aurora & Elgin right-of-way joins the Chicago Rapid Transit right-of-way. These meters are read once a month and the Chicago Rapid Transit Company either bills or credits the Chicago, Aurora & Elgin Railroad for the amount of electricity used or delivered. Sometimes the elevated feeds the Aurora & Elgin and sometimes the Aurora & Elgin feeds the elevated due to failure or shutdowns of adjacent stations.

The new automatic substations at Bellwood and Wheaton are identical in capacity and construction, the only difference being in the feeder circuits, two d.c.



Interior of New Substation Presents a Neat and Tidy Appearance

feeders leaving the Bellwood station and three d.c. feeders leaving the Wheaton station. These feeder circuits have automatic reclosing high-speed circuit breakers. The station itself has full automatic control with General Electric Company's selector type supervisory control from the power supervisor's office at Wheaton. One 1,000-kw., interpole, six-phase, 750-r.p.m. rotary converter is supplied with power from three 350-kva., single-phase outdoor transformers. The high-tension line is cut into the station through FKO-36 oil circuit breakers, which, with the current transformers, power transformers, lightning arresters and other high-tension equipment, are mounted outside of the substation building. Lightning arresters and current transformers have been mounted on concrete piers approximately 3½ ft. high to keep this apparatus out of the snow during the winter months.

The building is of hollow tile construction with pressed brick veneer and is artistically trimmed in limestone. It has a hip roof with concrete channel slabs mounted on steel I-beams. The building is 20 ft. x 30 ft., with the average height of the roof 20 ft. above the floor. The interior of the station is finished with hard cement. An operator's desk of metal construction is located in one corner of the room.

Ventilation is accomplished through openings in the ground directly in front of the building and by two louvres, one in each end wall directly above the floor. Two 4-ft. diameter ventilators are mounted on the roof, these having enough area to take care of all of the air admitted by the openings near the floor. The two openings in front of the building connect with duct lines. One duct leads to an opening directly under the machine and the other to a register in back of the switchboard, directly under the load-limiting resistor units. The air duct to the machine may be closed off by means of a hand-operated shutter, but it is impossible to close the air line to the resistor grids. The louvres in the end walls of the building take care of the air within the building and are so arranged that they may be closed by means of hand-operated shutters.

In addition to the regular automatic equipment mounted on the switchboard, a maximum demand meter connected in the d.c. feeder circuits has been provided in order to keep an hourly record of the station output. The station is visited once a day for the purpose of collecting charge and demand tapes and inspected and cleaned weekly, at which time a report is made.

Negotiations have recently been concluded by the Aurora-Elgin company with the Public Service Company of Northern Illinois for leasing the former's power plant, transmission lines and substations for a long term of years and for the purchase from the power company of the d.c. energy used by the railroad. In addition to receiving a substantial rental for the use of its power facilities leased, the railroad secures the advantages of a large interconnected power system and the provision of its future power requirements at attractive rates for a period of years without the necessity for making any additional investment.

Wage Rates Increase Faster than Cost of Living

WHETHER or not the average wage rate has kept pace with the increased cost of living in this country is the subject of an article in the "Monthly Labor Review" for January, 1926, by Ethelbert Stewart, United States Commissioner of Labor Statistics. His position is that the wage rate has not only kept pace with the cost of living, but within recent years the increase in wages has considerably exceeded the increase in the cost of living.

To make this evident, Mr. Stewart has calculated an index figure to indicate the relative purchasing power of wages as measured in living costs, based on the ratio in 1913 as 100. From these years to 1920 the increase in the cost of living exceeded the index numbers of the rate of wages per hour, but in 1921 the rate of wages increase exceeded the rate of cost of living increase by 15 per cent, and in 1925 the increase was 37.1 per cent. The figures for 1925 cover 717,916 workers, distributed through 66 of the principal cities of the country and cover 78 trades. That the standard of living has materially increased in many of the families of these workers since 1913, the writer says, is hardly open to doubt.

The figures just quoted relate to organized labor and the average wage rate is called the "average union wage rate." To determine whether the same condition applies to labor as a whole, calculations are made of three industries—boot and shoe, woolens and cottons. In these it was found that the purchasing power of wages had increased from 25 per cent to 76 per cent, as compared with 1913.

In view of the extensive use in electric railway wage arbitration of changes of the indexes of the cost of living, these figures are interesting, and may prove valuable.

The Readers' Forum

Annual Maintenance Number Commended

CHICAGO, NORTH SHORE & MILWAUKEE RAILROAD
CHICAGO, ILL., March 26, 1926.

To the Editor:

I wish to congratulate you upon the Annual Maintenance Number of the JOURNAL, dated March 20. To me it is very interesting and instructive, as I am sure it will prove to all railway executives.

The subject of maintenance of track and equipment is one of first importance in the operation of a railroad. The demand of the traveling public is for speed and comfort. To satisfy that demand rolling stock and roadbed must be maintained in the highest degree of perfection attainable.

An easy riding train and a smooth roadbed are the best advertisements for any railroad. I agree with your editorial point of view that railroads in their merchandising efforts should be careful not to economize too strongly on maintenance. It is false economy, and if budgets must be cut down the paring had better be done in other directions.

It is difficult to merchandise inferior goods. Good service is impossible without good equipment and good track and roadbed. I am glad to see the JOURNAL feature so prominently the importance of maintenance.

BRITTON I. BUDD,
President.

KANSAS CITY RAILWAYS
KANSAS CITY, MO., March 27, 1926.

To the Editor:

Permit me to commend the staff of the JOURNAL for the Annual Maintenance Number of March 20, not alone for the information contained, attractive presentation and the subjects covered, but for the way in which the entire maintenance question was tied in with the broad field of transportation merchandising.

It seems to me it is most essential in trying to put the merchandising idea over that we go beyond the transportation department employees. This is about identical with training soldiers who are going to occupy the trenches without at the same time developing the same spirit in the men who furnish the ammunition, food and other supplies from the rear. It is very difficult sometimes to make the fellow greasing curves and cleaning switches understand that he is just as essential a cog in the machinery as the platform men. Every one knows the story of the fellow who tapped car wheels on the railroad for 30 years, and when called into the president's office to be congratulated for his long term of service, and was asked what he tapped wheels for, answered, "Darned if I know."

Maintenance is the very heart of the merchandising proposition, and because the men responsible for proper maintenance work behind the scenes and in a less spectacular position, they are too frequently left out of the merchandising discussions and instruction. Your entire maintenance issue is keyed along the lines of bringing home to every one the vital part that every job plays in the final selling of the finished product.

F. G. BUFFE,
General Manager.

INTERSTATE PUBLIC SERVICE COMPANY
INDIANAPOLIS, IND., March 27, 1926.

To the Editor:

I have read with a great deal of interest the Annual Maintenance Number of the ELECTRIC RAILWAY JOURNAL, dated March 20, which emphasizes the part of the maintenance men in merchandising transportation, and think this number should be read by every one interested in electric railway service.

It is a fact that unless the overhead line, track and equipment are kept in such condition that proper and de luxe service can be given the public will seek some other means of transportation. Modern equipment, well maintained, sanitary and attractive, is most essential today, if the patronage is to be attracted and firmly secured.

Your splendid efforts in stressing the various ways in which improvements may be made in the service, and economies in maintenance effected, are to be commended, as well as the manner in which the manufacturers have reflected this same thought in their advertisements.

HARRY REID,
President.

HENRY L. DOHERTY COMPANY
NEW YORK, March 27, 1926.

To the Editor:

I certainly was pleased to receive the Annual Maintenance Number of the ELECTRIC RAILWAY JOURNAL. This is one branch of our industry which I have always felt has not been given the prominence which it warrants. I feel that the publicity which your paper has given to the work of the maintenance man will be very stimulating to the best interests of the electric railway business.

F. R. COATES.

BOSTON ELEVATED RAILWAY
BOSTON, MASS., March 29, 1926.

To the Editor:

One can have no misgivings as to the fundamental soundness of the fact that railroad men have in these modern days a very vital interest in merchandising transportation. While the transportation men have the show-window problem of delivering the service courteously, with regularity and sufficient to meet all legitimate needs, the physical property with which they must accomplish this can help or harm their efforts. This condition will cultivate a greater degree of intimate cooperation between the two branches of the industry. Ill-advised maintenance economy is just as conducive to poor service as would be demoralized transportation salesmanship.

I congratulate you on the issue of March 20, 1926, and feel confident the maintenance force will appreciate your calling attention to their responsibility as well as their great opportunity.

EDWARD DANA,
General Manager.

Token Clearing House Needed

EVANSTON RAILWAY
EVANSTON, ILL., Nov. 10, 1925.

To the Editor:

If we can find some way to handle the tokens of other companies we receive in our fare boxes it will greatly help the present situation. I have tokens of other companies by the hundred, in many cases only one token of a company, while in others there are from

one to 25 or more. It does not pay to write letters and mail these single tokens, for oftentimes the cost is as much as the few tokens are worth, regardless of the bother.

I would suggest that we start a clearing house so that once a month, or as often as necessary, I could mail or express all my foreign tokens and receive a check in return. This would have to be arranged at a set price regardless of the value of the tokens, because it would be impossible to get all companies to pay in a certain amount each year to pay for the cost of handling. I would suggest that we sell them for 5 cents each, in lots of 100. It appears to me that this proposition could best be handled in Chicago because the checks issued would be payable through a Chicago clearing house, in most cases without exchange.

I am, however, at a loss to know who would handle the matter, but if no one else will do it I will assign a clerk to the job and get it started provided you think it is the best way in which it can be done.

CHARLES F. SPEED,
Vice-President and General Manager.

Bus Rumors Grow as the Square of the Distance

MOUNT VERNON, N. Y., March 22, 1926.

To the Editor:

How prophetic were your words: ". . . with the distortion of facts likely to vary with the square of the distance" in your March 13 New York bus story entitled "Transportation Men Must Supply Facts."

Just two days ago the mail brought a letter from Ludwig Spängler, director of the Vienna Municipal Street Railways, asking what truth there was in a cable to the *Vossische Zeitung*, of Berlin, that all of New York's street railways were to be replaced by motor buses!

This reminds me of an old-time German almanac entitled "Der Hinkende Bote" or "The Limping Messenger." Doubtless the data in the almanac were soberer and more truthful than statements on like matters in the country newspapers, but the cover picture of the veteran and his crutch ineluctably lead to the thought, Lies fly, but truth limps.

If the industry wishes to escape a frightful economic waste it will have to do more than lean upon the shoulders of ELECTRIC RAILWAY JOURNAL and the press bureau of the American Electric Railway Association. Such articles as the JOURNAL'S newspaper clipping review of March 13 will justly be acclaimed as "great stuff," but please to remember that these comments will reach only a fraction of the persons who read the original newspapers.

You can't kill a dozen mosquitoes in a swarm without many a severe bite, no matter how you struggle, but you can prevent the birth of thousands with a little crude oil.

What the industry needs is not a denial campaign but an affirmation campaign. Tell the public through real "spreads" in the great magazines and newspapers where buses have proved right and where they have proved wrong; why bus fares are usually higher; how paving and other unfair burdens force railways to give less service at higher fares; and, above all, why no surface-using vehicle—street car, motor bus, taxicab, automobile or truck can refrain from obedience to the "Stop-Stop" which seems always ever so more common than the eagerly sought "Go-Go."

WALTER JACKSON.

European Rail Welding Practice

METAL & THERMIT CORPORATION
NEW YORK CITY, March 4, 1926.

To the Editor:

In the issue of ELECTRIC RAILWAY JOURNAL for Feb. 27 appears an article "Impressions of European Tramways" by James A. Emery, in which, on page 364, the following statement is made: "Heavy flat tie rods are used and no joint welding was observed, although it is understood that welding has been practiced to some extent."

A few paragraphs further down in the same article Mr. Emery particularly calls attention to the fact that, compared with American operation, the cars are almost noiseless, and gives particular credit to the track.

I realize, from the editor's statement, that the impression of Mr. Emery as outlined in this article was more or less of a hasty observation while on a pleasure trip, but in justice to those interested in rail joint welding the impression which he leaves in regard to this particular question of joints should be corrected.

The company with which I am connected has numerous affiliations abroad, and we are very familiar with the practice of joint welding in all of the foreign countries, perhaps more so than any other American organization. The information which we have is considerably at variance with that which seems to be conveyed by this article. Also, the various other articles which have appeared from time to time regarding European practice have all indicated that the standard in track construction abroad is to weld the rails with thermit. This is decidedly borne out by the data which we have.

As a matter of information on this subject, I present the following figures as to the number of thermit joints welded on the European Continent and in the British Isles. It will be noted that the period from 1915 to 1921 inclusive has been omitted, as during this period practically no trackwork was done in any of these countries during the war or immediately thereafter, and the figures would be misleading.

	Number of Thermit Joints
1912	99,800
1913	98,900
1914	96,000
1922	86,800
1923	113,300
1924	187,200

While the figures for 1925 are not available, indications from the records of the first six months are that the number of such welds will run well in excess of 200,000.

When you consider the amount of trackage abroad, it will be readily understood that this number of welded joints must necessarily constitute very close to the entire number required on paved track rehabilitation and extension work. Compared with these records of European practice, we find that in America the thermit joint was used on only about 40 per cent of the new trackage laid during 1925. This proportion has been increasing very rapidly in the last three or four years.

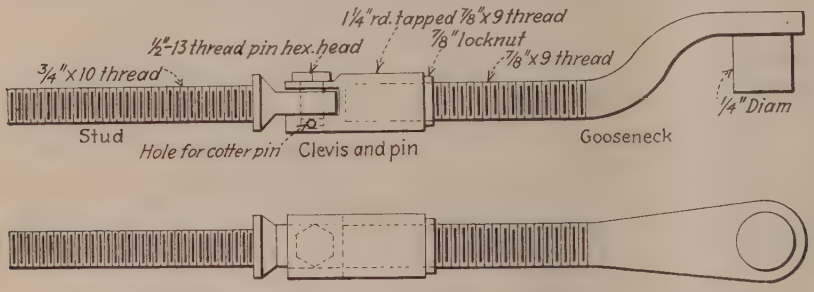
JOHN B. TINNON,
Manager Rail Welding Department.

Maintenance Notes

New Connecting Rod Reduces Track Switch Failures

By H. J. CHARTERS
Portland Electric Power Company, Portland, Ore.

CONNECTING rod troubles amounted to 30 per cent of the total switch failures during the year 1924 on the city lines of the Portland Electric Power Company, Portland, Ore. This created a considerable hazard as a broken rod left the switch point entirely free and might result in a split switch, with consequent derailment of electric cars. As the electric switches are all located at heavy traffic points, it was quite essential to prevent delays.



Connecting Rod for Electric Track Switch

To remedy this condition, a new connecting rod for the company's 23 Cheatham heavy type electric track switches has been developed and is now being installed as rapidly as traffic conditions permit. With the old type construction, the eccentric lever in the track box placed a considerable strain on the rod at the extreme positions of the switch. As a result, the threaded rods soon broke at the switch points. The threaded part was necessary in order to provide linear adjustment. This is necessary since the distance from the switch point to the lever in the track box varies at each location due to the different types of track switches that are in use. The movable connections bent the rod at each movement of the switch and caused the breaking. A scheme of allowing the rod to move slightly at the switch point end was tried, but this was unsatisfactory as the rod tended to revolve unless fastened rigidly.

With the new rod, which is now being installed, the flexible part of the mechanism is placed close to the switch point. This relieves the rod of all strain incidental to the movement of the switch and at the same time provides a means whereby the spring in the track box will keep the point tightly against the sides of the switch to which it is thrown by the magnet. The new rod seats in the track box lever, thus eliminating the link furnished in the previous construction. All wearing parts of the new rod are case hardened to minimize wear. The ½-in. clevis pin is made of chrome vanadium steel, the clevis of cold rolled steel and the stud and gooseneck are of mild steel.

These connecting rods have been installed on Pennsylvania type and also on Buda type switch points, where traffic during rush-hour periods is the heaviest to be encountered on the system and where breakage previously has been about one rod per month. Installation in connection with the Pennsylvania switch provides a very severe test for the rod as the hole in the point of the mallet box pin is considerably nearer the heel of the switch than in other types, thus decreasing the leverage of the track lever.

The connecting rod as shown in the sketch is designed to fit any switch on the city lines, there being four types of switches in use. The stud and gooseneck were made long enough for use on the switch requiring the longest rod. To fit a rod on any other switch it is necessary merely to saw off the stud to the proper length and adjust the gooseneck by means of the threads and locknut. In the case of a very close distance between the switch point and track box lever the threaded part of the gooseneck may be sawed off on the job without any special tools.

The diameter of the clevis is determined by the size of the hole through the switch casting. In the switches used in Portland this hole is 2 in. by 2½ in. and the 1¼-in. diameter of the clevis provides plenty of clearance for free movement of the apparatus.

Removing Paint by Sand Blast

SAND BLASTING with the aid of a home-made outfit has been found very useful by the Mobile Light & Railroad Company. The compressor and supply of sand are housed in an old box car. The rubber hose pipes leading from this com-

Cleaning Dash with Sand Blast in Mobile

pressor are about 30 ft. in length, and the sandblasting is done out of doors. The accompanying view shows the sand blast removing paint from car dashers.

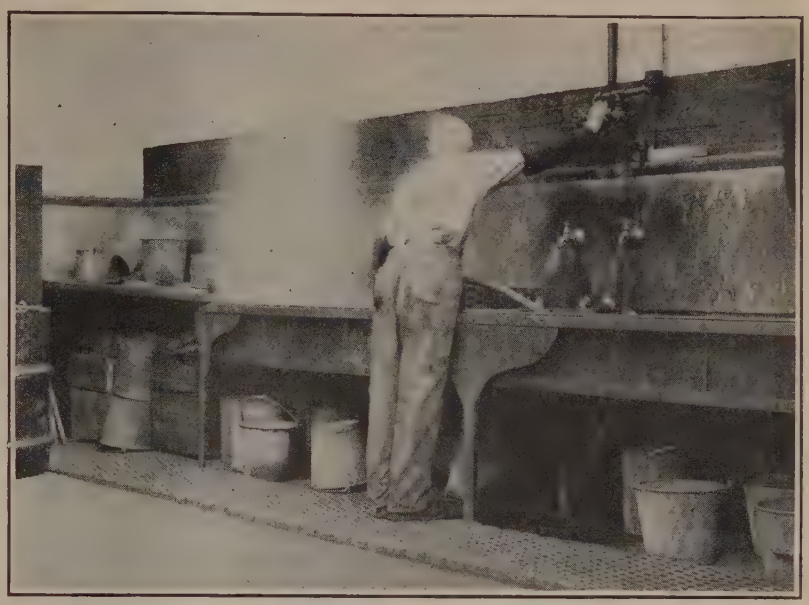
For removing paint in this way, an air pressure of from 80 to 90 lb. per square inch is used. For frosting glass, as for the car numbers on the vestibule sash, the pressure is only from 40 to 50 lb. On the Mobile cars it is the practice to frost the upper vestibule sash to the right of the motorman, as this plan is found to keep out light that might bother him.

A New Use for Old Tires

By F. J. Foote
Superintendent of Motive Power and Equipment Indiana, Columbus & Eastern Traction Company, Springfield, Ohio.

USE of heavy pieces of rubber as springs is not new. In fact, the writer can remember many years ago seeing a chunk of rubber 6 in. in diameter and 6 in. high that was used as one of the many truck springs on a steam road car. This rubber, however, was very hard and more like wood than rubber and could not have been very efficient as a spring.

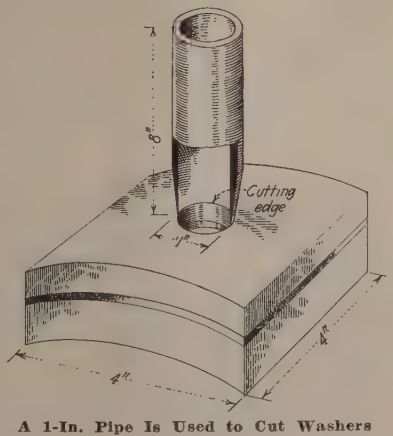
Modern methods of rubber manufacture as applied to tires have produced a product that is comparatively soft and resilient and at the same time stands an enormous amount of wear. About two years ago our company purchased some new cars on which the motors were spring suspended. These springs were about 3 in. in diameter by 3 in. long and were made of ⅝-in. steel rods. After about six months service these springs began to break, due no doubt to the hammering action of the motors on the truck. At this time our company was operating some large buses that used 38 x 7 pneumatic tires. One of these tires failed at the rim, and as the tread was but slightly worn it was cut into blocks about 4 in. square on the bandsaw, and these were strung on the safety bolts of the spring suspension in the same manner as the original springs were. Holes of 1-in. diameter were punched in the center of each block by means of a punch made from a short length of 1-in. pipe. This was pushed through the rubber by an arbor press. In placing these on the safety bolts two, three or four were used at each suspension point as was required to make the necessary length of spring.



Car Mat Cleaning by Steam and Water as Used in the Shop of the Department of Street Railways, Detroit. A Dirty Job Is Made Comparatively Simple and at the Same Time Better Results Are Obtained

These rubber washers have served the purpose of a cushion support admirably and, in fact, have given better results than the steel springs. They have now been in use about eighteen months and seem in as good condition as when first applied. The first cost was practically nothing, as the scrap value of old tires is very small.

The construction of these rubber washers is so simple that sketches seem superfluous. However, I am giving a rough sketch of a completed



A 1-In. Pipe Is Used to Cut Washers from Old Tires

washer and the punch used for making the holes. A bandsaw is very efficient in cutting these tires, but it must be kept sharp. If the workman is fastidious the corners may be cut off easily or even circular washers made. The curvature, due to the shape of the tire, is not objectionable when used as a spring.

Washing Car Mats Made Easy in Detroit

CAR mats of the type used in the cars of the Department of Street Railways, Detroit, Mich., get very dirty, particularly in the winter months. A special metal-lined sink has been constructed in which the mats are placed loosely rolled together. A steam and water spray is used to clean them, as shown in the view. The steam not only furnishes pressure to force the dirt from the apertures in the mat but the heat as well aids the loosening of dirt, particularly of an oily nature. This process of cleaning requires only a few moments.

Spray Painting the Bottom of a Car

IN New Orleans it is the practice to spray paint on the under side of steel cars every time that the car goes through the paint shop. This work is done from a pit which is equipped with exhaust pipes to take away the fumes of the paint spray.

The main exhaust pipe from the exhaust fan is connected with 9-in. pipes which enter the side of the pit at a number of points. The outer end of each exhaust pipe in the pit is fitted with a slide so that only those openings near the spray painter need be open.

Before the paint is applied to the bottom of the car, the motors and other parts of the equipment are scraped so as to be free from dirt

and are then cleaned with air. Both the bottom of the car and the equipment are painted. The color used is green.

No trouble has been experienced from any spray paint from the bottom of the car coming up on the side panel, which is painted a cream.

New Equipment Available

Prefocused Lamp and Socket

FOR use in railway signals, locomotive headlights and projectors the General Electric Company has developed a prefocused incandescent lamp and special socket. The new lamp has a special base which, when used with the socket, assures the filament of the lamp coming in exactly the same position as that of every other one of the same size and type.

Armored Cap and Cone Insulator

USE of new armored caps and spring steel lock washers developed by the Albert & J. M. Anderson Manufacturing Company is said to overcome two important installation drawbacks to the cap and cone suspension. The objections which have been overcome are the difficulty of pulling the cap up tightly without crushing the insulation and, after tightening, the frequent tendency of the cap to loosen due to the lock washer having become set and therefore ineffective.

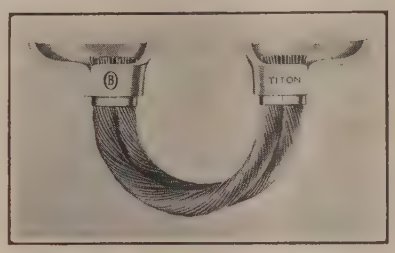
The insulation is molded into the one-piece casting of the armor, together with the steel stud. This insulation, which is stated to be high in both electrical and mechanical strength, is positively bonded to the metal and held permanently in place by fins, which are cast inside and integral with the armored caps. Separation of the insulation from the armor while the cap is being installed is therefore impossible.

It is possible to put great pressure upon the cap. The usual tongs are dispensed with, as the only tool necessary for installation is an ordinary wrench. Where the wrench is used, on the hexagonal top, the armor is the heaviest. The armor is also turned under at the extreme ends and, being metal, a very acute angle is possible; this is of considerable assistance in accelerating drip, thereby greatly minimizing creepage.

With the new hardened spring steel lock washer a positive lock is always assured. It is claimed by the makers that this washer cannot become set or lose its springiness.

Copper Arc Weld Bond

FOR attachment to the railhead by the copper metallic arc welding process, a new type of bond, known as the Titon has been developed and is now being manufactured by the Ohio Brass Company, Mansfield, Ohio. The bond is provided with terminals of heavy steel which support the molten metal as deposited and act as a mechanical protection to the finished weld. These are offset and are large enough to permit the use of an arc drawn from $\frac{3}{8}$ in. to $\frac{1}{2}$ in. without the usual danger of securing a porous or incomplete weld, since the arc is easily directed to the desired welding point. This and the use of the copper metallic arc process with copper alloy as the electrode simplifies as well as expedites installation.



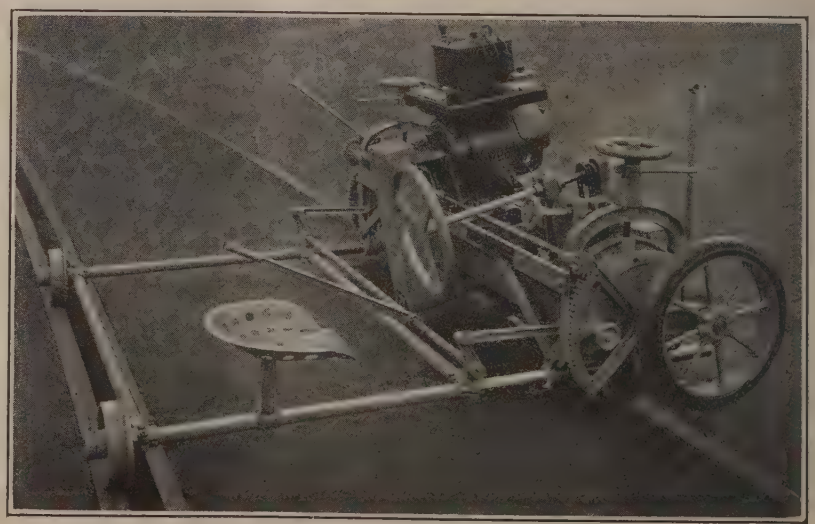
The Titon Bond Has Been Developed for Attachment by Metallic Arc Welding

It is stated that the design of the terminals and the thickness of terminal walls assist in effecting a complete homogeneous fusion of the copper strand terminals and railheads. This insures maximum conductivity and strength of the bond with a minimum use of welding material. During the past two years the Titon bond has been undergoing extensive tests under conditions of actual service.

Rail Grinder

SEVERAL improvements have been made in the Atlas Rail Grinder manufactured by the Railway Trackwork Company, Philadelphia, Pa. A tilting grinding wheel has been provided and the controlling tilting arrangement made simpler in design and more easily operated than was possible in earlier models. With the new arrangement it is necessary only to turn a small handwheel to adjust the grinding carriage to any angle of grinding which may be desired.

The method of changing grinding wheels has also been simplified. It is now necessary only to remove one nut from the emery wheel flange, thus doing away with the removal of the arbor pinion or drive chain. The present model of the grinder may be derailed merely by turning the hand-crank at one end of the machine. This lowers the derail wheels to the pavement and raises the grinder from the track. Thus 90 per cent of the weight of the machine is supported on the two roadway wheels. The operator can then lift the outrigger end of the machine and pull it off the track.



Improved Atlas Rail Grinder Embodies Several New Features

Association News & Discussions

Co-ordinating the Bus with Existing Transportation Facilities*

Latest Methods Developed by Philadelphia Rapid Transit Company in the Operation of Gas-Electric Equipment—Gas Consumption May Be Slightly Higher for This Type of Equipment, but Is Considered Justifiable—Results So Far Show Deficits

By R. H. HORTON
President Philadelphia Rural Transit Company

UNDOUBTEDLY the few years just past and those in the immediate future are proving the most important in the entire life of the urban transportation enterprise. We electric railway men have only recently discovered that we are not so much operators of electric railways as purveyors of transportation to the public. We have discovered that which the merchant has always known—that the public taste is fickle and changes rapidly, and that where a man wears a cotton shirt today, tomorrow he demands a silk shirt, and the man who stocks only cotton shirts to sell is lost.

Of course we must still sell electric railway transportation, for we all see many instances where nothing else can suffice, but we are awakening to the fact that many different varieties of transportation exist and the public taste for them must be met. This is particularly emphasized by the fact that in 1920 only sixteen electric railway companies were operating motor buses, while in 1925 280 railway companies were using them. So today the industry finds itself in a state of flux and with the problem before it of consolidating and co-ordinating the various methods of transportation. In Philadelphia we have subways, elevateds, street car lines, motor buses and are about to add the taxicabs. All of these should be properly co-ordinated with a view to placing at the service of the community that type of transportation which is best suited for the occasion.

Some of our transportation men view the motor bus as merely a street car on rubber tires and a purely transportation vehicle and are emphatic in the declaration that the deathknell of the rail car has sounded, while the other extreme is fully as emphatically stated by many that the motor bus is but a plaything, a fad of the moment and in a few years will be as hard to find as the old-fashioned bicycle. But is it necessary to make a determination of this question? The exact position of the automotive vehicle in the problem of transportation is to the minds of many not presently solvable, and I must confess that the more study I give to this problem the more confused I find myself becoming. The motor bus has some very definite positions between these extreme views, but the development is now in that anomalous position where the motor bus may operate more cheaply in one location and the electric car in another because of the important variable factors involved, which must be considered in each specific case under consideration.

That the bus can ever take over the entire field of transportation seems to be subject to grave doubt. That surface rail transportation will disappear in some communities seems to be a reasonable assumption. In fact, in a few very small communities it has. On the other hand, in some larger communities, where the bus has attempted to handle the entire business, including the rush-hour load, it has met with failure.

In Philadelphia we are faced with a situation that we have certain streets and boulevards upon which it would not seem to be proper, from an esthetic viewpoint, to plant rails, poles and wires. There is a demand for transportation; the motor bus is available to care for it, and hence these routes are being established. We have some territory sparsely populated and in need of development, which development will be accelerated upon the supplying of transportation. In such cases the broad interest of the community demands that the prime consideration be: Can the community as a whole afford to supply this unprofitable transportation enterprise in order that this one section of the community may benefit? In the past, with only rail lines to depend upon, such services have been difficult to provide and in many instances have proved to be too great a drain upon the community. With the motor bus at hand our task is much simpler, for with a comparatively small investment one or two buses can serve a community, with consequently a smaller amount of loss.

The congestion of our city streets is ample proof of the demand for a quicker and more comfortable kind of transportation, as well as a reflection of the fad of the day to ride on rubber. The passenger automobiles entering and leaving the central business district of Philadelphia on a typical weekday increased 177 per cent in the last six years. There are more than 100,000 additional passenger automobiles daily entering and leaving this narrow district bounded by Arch and Walnut Streets and the two rivers than there were six years ago. On an average these vehicles contain less than two passengers. Such an uneconomic use of the city's streets with the enormous expense of policing and maintaining cannot continue. We find that automobile passengers use 50.4 sq.ft. of street space per passenger in comparison with 8.2 sq.ft. per passenger for surface cars, and an estimate of 7 sq.ft. per passenger for double-deck motor buses, assuming that it is only half full on an average.

The foregoing represents more or less the reasons for the street railway com-

*Abstract of a paper delivered before the Pennsylvania Street Railway Association, Pittsburgh, March 12, 1926.

COMING MEETINGS OF *Electric Railway and Allied Associations*

April 13-16—Southwestern Public Service Association, Galveston, Tex.

April 21—Central Electric Traffic Association, special meeting, Keenan Hotel, Fort Wayne, Ind., 9 a.m.

April 21-23 — American Welding Society, annual meeting, Engineering Societies Building, 29 West 39th Street, New York City.

April 23—Metropolitan Section, American Institute of Electrical Engineers, Engineering Societies Building, New York City, 8 p.m.

April 30—National Highway Traffic Association, annual meeting, Automobile Club of America, New York City.

May 7—Metropolitan Section, American Electric Railway Association, Engineering Societies Building, 29 West 39th Street, New York City, 8 p.m.

June 2-4—Canadian Electric Railway Association, annual convention, Quebec, Canada.

June 9-16—American Railway Association, Mechanical Division, annual convention, Atlantic City, N. J. Car matters, June 9-11; locomotive matters, June 14-16.

June 25-26 — New York Electric Railway Association, annual meeting, Hotel Champlain, Bluff Point, N. Y.

June 28-July 2 — Central Electric Railway Association, summer meeting, S. S. South American, Buffalo, N. Y., to Chicago, Ill.

Oct. 4-8—American Electric Railway Association, annual convention and exhibits, Public Auditorium, Cleveland, Ohio.

pany establishing a motor bus service and placing an order for 200 vehicles in January, 1925, which was followed by another order for 160 more in January, 1926. These buses were all of the gas-electric type.

During the month of February our over-all speed has been 10.62 m.p.h.; this figure is obtained by dividing the total time the buses are on the street by the total mileage made. The average schedule speed, being the result of dividing the miles operated by the actual running time between terminals, is 12.02 m.p.h. I have not complete figures before me, but I shall be very much surprised to learn of any company that maintains an average speed as high as this, and I might also remark that in these calculations the interurban buses have been eliminated.

The maximum mileage which we have accumulated on any one vehicle is on bus No. 501, which has operated a total of 47,351 miles, commencing in August, 1925. During this period the bus has been pulled in twice: on Nov. 3, 1925, for a broken starter and on Jan. 3, 1926, for a burnt out ignition coil.

Most bus operators have established an inspection every 2,000 miles. When starting our operation here we adopted the same principle and we are now just beginning to study the refinements which will be possible. Our first step has been to increase the period of inspection in one of our garages to 4,000 miles. We have no doubt of its success. Therefore, so far as labor cost is concerned, we have cut our garage maintenance in half. We have just made this first change in our inspection period and therefore cannot give data as to its result. Inspections at intervals of 15,000 to 20,000 or even 25,000 miles do not appear to us to be an unreasonable expectation. The entire principle of inspection, however, we expect to change. We have been working with the manufacturers of electrical apparatus to develop a watt-hour meter for measuring the power output or consumption. Mileage has heretofore been used as a measure of work done, but we submit that miles are extremely variable and that 2,000 miles of operation on one route may represent far more work done than 2,000 miles of operation on another route. By the use of these meters on the buses, however, we shall have a positive index of work done. The meter has three dials, each equipped with a moving and a stationary hand. The stationary hand is set at a point representing the amount of power which may be produced or consumed before inspection is necessary. When the moving indicator coincides with the stationary one, indication is given that inspection is due.

Our accounting department will keep track of the gas consumed by each bus, the mileage operated and the kilowatt-hours used. Kilowatt-hours per gallon of gasoline should be fairly constant and definite after once being determined. The instant that a particular bus shows a reduced number of kilowatt-hours per gallon it is a definite notice that something is wrong with the engine, the generator or the driver. This indication is definite and positive. The number of kilowatt-hours per mile is not so accurate a measure, for in this instance obvious variables must be taken into consideration.

After the inspection and overhaul are completed the bus will be connected to a water rheostat and operated under test with a given quantity of gasoline, probably one gallon. In this test the engine will be gradually accelerated from idling speed and the voltage and amperage read at various revolutions per minute. This will give an index as to whether the generator is functioning properly and producing the correct amount of current at the various revolutions per minute. A more delicate watt-hour meter will be installed here and the total watt-hours for this gallon of gasoline will be determined. Thus at the close of the test, which should not consume more than fifteen minutes, we shall be able to tell whether the inspection and overhaul have put the bus in proper operating condition.

We have been operating in the city of Buffalo six six-cylinder "ZY" type Yellow Coaches which are almost duplicates of the ones operating here, except that they are equipped with a mechanical drive. During the month of October their gasoline consumption averaged 3.98, or say 4 miles per gallon, which is, let us say, 0.7 of a mile per gallon better than our expected minimum. This may be the price which we may have to pay for the advantages of the electric drive, although I am not ready to concede that until after we have made an effort to train our drivers as Buffalo has.

Fundamentally, when we are talking of gasoline consumption we are talking of costs which are about 4½ cents per mile, and when we speak of the advantages of the electric drive we mention first and foremost the high average speed, in which case we are dealing with costs of about 14½ cents a mile for wages alone. Therefore a factor which affects gasoline consumption to the extent of 10 per cent will affect costs to the extent of about 45 mills, but a factor which affects speed to the extent of 10 per cent affects costs to the extent of about 1½ cents for wages alone, and furthermore affects the fixed charges in the same ratio as well as the revenue itself.

The foregoing discussion has concerned gasoline consumption on double-deck buses. I regret that I have no figures of six-cylinder single-deck buses with which to compare our records.

Oil consumption is always a matter of concern to the operator, and in this respect our records have been not only most satisfactory but most surprising. We find the six-cylinder buses in Buffalo averaging during a month about 24 miles per quart of oil, while our gas-electric buses show an average of about 38 miles. This result is obtained because of the lesser peak of revolutions per minute on the electric drive and the lesser number of engine revolutions necessary on this type of vehicle.

Net income to date has been written with red ink, largely due, however, to the fact that we have included a large number of feeder and undeveloped lines in our operation; also that we have not been able to operate on Broad Street because of subway construction, and it is on this route that we expect our most successful operation.

This motor bus is a new development, but the same principles obtain and the greatest joy of its operation comes from the freedom with which it can be routed and rerouted, detoured or turned back, as the traffic demands.

Second Highway Safety Conference Meets

APPROXIMATELY 1,200 men and women from all parts of the country attended the three-day session in Washington, March 23-25, of the second national conference on street and highway safety called by Secretary of Commerce Hoover. The first of these conferences, which met in December, 1924, adopted as the result of numerous committee studies a program of highway traffic relief which has had a considerable influence on the development of highway traffic practice and laws in all parts of the country. The second conference proceeded from the point where the first one left off. Last spring committees were appointed which have had numerous meetings and which presented to the current conference the results of their deliberations and their recommendations.

The purposes of the two conferences have been given as follows: First, to focus public attention on the appalling increase in street and highway accidents, and, second, to develop a comprehensive program for improvement of traffic conditions and reduction of accidents upon which all concerned, including state and municipal officials and others interested, could agree. The six committees which have been working on the program were (1) uniformity of laws, rules and regulations, (2) enforcement, (3) causes of accidents, (4) metropolitan traffic facilities, (5) statistics, and (6) public relations.

The major part of the deliberations of the conference was given over to the adoption of a model motor vehicle law to serve as a general pattern for states and municipalities. The proposed measures, which include registration and title certification acts, a chauffeur license act and a code for vehicle operation, follow in the main the recommendations of the committee of experts, though changed in some minor particulars. The conference also indorsed the report of the committee on enforcement, which recommended measures of organization and procedure to secure better enforcement of the laws and regulations affecting street and highway safety, and approved the report of the committee on causes of accidents. This committee gives such information as is available as to causes of accidents and outlines a program for determining the cause of accidents with a view to their elimination.

The report most interesting to railway men was that of the committee on metropolitan traffic facilities. This report outlines a program for improvement of traffic facilities and recommends suitable plans of organization for its accomplishment. Little discussion was given to this report on the

floor and to the report of the committee on statistics, which presented essential facts of the accident record together with its recommendations as to improvement in the collection and analysis of accident statistics.

Central Traffic Association to Hold Special Meeting

IN ACCORDANCE with the action taken at the meeting of the Central Electric Traffic Association held on March 17 and 18 a special meeting of the association will be held at the Keenan Hotel, Fort Wayne, Ind., on Wednesday, April 21, beginning at 9 a.m. This meeting is called for the purpose of conducting the regular business of the association. Being a one-day meeting, the chairmen of the various committees have been requested to call their committees together and have their reports in shape for presentation prior to the time when it is planned to assemble at Fort Wayne.

American Association News

American Executive Committee Meets

Plans for the Cleveland Convention and Various Committee Reports Filled a Busy Session—Membership of Association Increased

REPORTS on the development of plans for the coming annual convention at Cleveland, growth in membership, national relations and progress of various standing committees were made at a regular meeting of the American Electric Railway Association executive committee held at association headquarters in New York on March 26.

As chairman of the membership committee, J. H. Hanna reported an increase in company members from 733 on Jan. 29, 1926, to 736 on March 26. Individual members have increased from 932 to 1,022 during the same period. This, according to Mr. Hanna, represents an increase in individual members of 20 per cent since the present drive for this class of membership was instituted.

Chairman J. P. Barnes of the committee on subjects and meetings outlined a general program which the committee has under consideration for the Cleveland convention next fall. The procedure followed in recent years of setting aside an afternoon for the inspection of exhibits will be repeated. An evening meeting under the auspices of the Advisory Council is also planned. To conserve time and to make room on the program for speakers, committee reports will again be presented in the form of brief abstracts by the various committee chairmen. These tentative plans were approved by the executive committee.

Convention Arrangements Reported

Arrangements for the convention at Cleveland were reported by C. E. Morgan, chairman of the location committee and of the special sub-committee that was appointed at the last meeting with power to act in consummating arrangements for the convention. There will be available at Cleveland 111,000 sq.ft. of indoor exhibit space, in addition to 7,200 sq.ft. of outdoor space for working exhibits of construction equipment and 1,500 lineal feet of track space for the exhibition of cars. The indoor space will be located in the Cleveland Auditorium building and in a temporary building approximately 200 ft. x 400 ft. in gross dimensions. This temporary structure will be connected with the auditorium in a manner to put the entire exhibit in effect under one roof. There will be an 18 ft. net overhead clearance under the roof girders of the temporary building. A price of 75 cents per square foot has been established for inside or outside exhibit space. This is based on the sale of 100,000 sq.ft. A charge of $4 per lineal foot will be made for track space.

It was the opinion of the committee that handling and labor costs for setting up exhibits will be much lower than was the case last year at Atlantic City. On this basis it is expected that the total cost to exhibitors despite the increase in space rates will be less than the amounts expended at Atlantic City last year. No small part of this saving will be effected through lower hotel costs.

Cleveland Committee Organized

Cleveland hotels have underwritten more than 3,000 rooms for the period of the convention. All local arrangements will be handled by a special convention bureau appointed for the purpose. The association will deal directly with this bureau. A special hotel committee headed by Paul E. Wilson, secretary Cleveland Railways, will receive all applications for hotel reservations on special blanks which will be provided for this purpose and distributed to all those expecting to attend the convention.

The Cleveland arrangements will be handled by the following special committee: W. R. Hopkins, city manager of Cleveland; H. K. Hauk, general manager G. C. Kuhlman Car Company; G. W. Lucas, president Cleveland Frog & Crossing Company; T. E. Monks, vice-president Guardian Savings & Trust Company; W. J. Hanley, district manager General Electric Company; W. C. White, president White Motor Company; F. W. Campbell, manager railway section Westinghouse Electric & Manufacturing Company, and John J. Stanley, president Cleveland Railway. J. H. Alexander, Paul E. Wilson and S. J. Cotsworth, chairmen of the exhibit, hotel and entertainment committees, respectively, and C. E. Morgan for the executive committee will represent the association on the Cleveland committee.

Resolutions prepared by the exhibit committee to enlist the co-operation of all manufacturers in avoiding practices that would detract from the regular exhibits were read by F. C. J. Dell. These are to be put in final form and published at a later date.

In the absence of Chairman Reid, Charles L. Henry, attorney for the committee on national relations, reported on developments in Washington. Progress in the hearings on proposed legislation for the regulation of interstate bus operation was outlined. Motor truck interests were the only element reported in direct opposition to the bill.

On a rehearing before the Interstate Commerce Commission, the committee plans to test the question of the jurisdiction of the commission over the electric locomotives of independently operated electric railways. This matter has been raised by the issuance by the commission to all electric railways reporting to it of a pamphlet containing rules and instructions for inspecting and testing of locomotives other than steam.

Various other committee reports were submitted during the meeting. A recommendation by the publicity committee for a contribution of $250 to defray part of the cost of an exhibit of utility advertising at the Philadelphia meeting of the Associated Advertising Clubs of the World was approved. A convenient handbook of prepared addresses on electric railway subjects, which was prepared for the speakers' committee, was distributed among the executive committee for inspection. It is planned to add addresses on other subjects to this handbook.

James P. Barnes reported on the proceedings at the recent national conference on street and highway safety. J. W. Welsh read the report of the Accountants' Association. In the absence of Mr. Stuart, Morrell W. Gaines represented the advisory committee on electric railway financing. J. N. Shannahan commented on the excellent report which was rendered by this committee at the Atlantic City convention last fall and said that the industry is indebted to the committee for its excellent work in the preparation of its report. He said that this valuable contribution to the upbuilding of the industry would be lost unless individual companies follow the advice given in the report.

Publication of the book of railway operating practices compiled by the committee on management and operation was reported by G. C. Hecker. Members of the executive committee subscribed for several hundred copies to aid in the distribution of the book.

G. A. Richardson, chairman of the rapid transit committee reported that the committee's engineer, E. J. McIlraith, whose services were donated by the Chicago Surface Lines, has been in the field collecting the data to be used in the committee's report. G. C. Hecker, chairman of the manufacturers' engineering committee, which has been working on the preparation of recommendations for car sizes and weights to meet the requirements of average

electric railway operating conditions, reported progress in the preparation of the committee's report. He said that this report would soon be ready for submission to the manufacturers' executive committee, when that committee, whose appointment was left in the hands of Mr. Storrs, is organized. Mr. Hecker suggested that upon completion of the report an effort be made to enlist operating companies in support of the recommendations made by the committee. H. H. Norris represented the educational committee and distributed several pamphlets that have been prepared to cover various phases of employee educational work. Demonstration of a foremen's conference similar to that recently made by Mr. Norris before the Central Electric Railway Association at Indianapolis is being considered by the program committee for the Cleveland convention.

The following were present at the meeting:

President Frank R. Coates, J. H. Hanna, B. A. Hegeman, Jr., R. P. Stevens, Charles L. Henry, C. E. Morgan, C. R. Harte, H. H. Norris representing Mr. Dana, G. A. Richardson, J. N. Shannahan, S. J. Cotsworth, E. P. Waller, J. P. Barnes, T. A. Kenny, M. B. Lambert, Morrell W. Gaines, L. H. Palmer and Managing Director L. S. Storrs, J. W. Welsh, F. C. Dell, G. C. Hecker and J. W. Colton of association headquarters.

It was decided to hold the next meeting of the committee on May 14, the location to be announced later.

Wednesday Exhibit Day—Outside Demonstrations Barred

WEDNESDAY, Oct. 6, has been set aside for inspection of exhibits at the Cleveland convention, through the following resolution passed by the executive committee of the American Electric Railway Association at its meeting held March 26:

Whereas the practice of setting aside one day during the convention week for the intensive inspection of exhibits by operating members has proved to be a general success during the two previous conventions, and

Whereas, many expressions of appreciation and other favorable comment from both railway and manufacturer members have resulted from this practice, be it

Resolved, That the executive committee in meeting assembled this 26th day of March, 1926, again votes to set aside Wednesday, Oct. 6, 1926, as a day to be devoted exclusively to exhibit inspection, and requests that no meetings of any kind be scheduled for that date.

Resolutions were also passed in disapproval of the practice of holding demonstrations of equipment away from the exhibit buildings. These resolutions follow:

Whereas certain manufacturers of automotive equipment have in past years brought buses to our conventions and parked such vehicles at advantageous points in the vicinity of prominent hotels and extended invitations to delegates to accompany their representatives on demonstration trips, and

Whereas certain other manufacturers in past years have staged exhibits in hotel rooms, and

Whereas such practices tend to defeat the purposes of the exhibition by reason of such railway delegates absenting themselves at various times from the exhibition proper and thus neglecting the study of exhibits of other manufacturers, and

Whereas the action of this committee last year in withholding its approval of such practice proved to be so satisfactory for all exhibitors at the convention, be it

Resolved, That this executive committee in meeting assembled this 26th day of March, 1926, hereby again votes to look with displeasure upon manufacturers having demonstration trips or exhibits at any place other than that designated by the association, and be it further

Resolved, That the secretary be instructed to transmit copy of this resolution to all manufacturer members and through the Cleveland convention committee, to public authorities in the city of Cleveland interested in co-operating with the association; also to the convention board of the Cleveland Chamber of Commerce and the managements of the various hotels in the city of Cleveland with the request that all of those interested lend their kindly assistance and co-operation in seeing that the spirit of this resolution is carried out.

Equipment

FOURTEEN members of the equipment committee of the American Electric Railway Engineering Association spent two busy days in Detroit, Mich., March 22 and 23. The first day was taken up by a business session held at the Book-Cadillac Hotel, and the second day was devoted to inspection trips through the River Rouge plant of the Ford Motor Company and the Highland Park shops of the Department of Street Railways. At the railway shops, in addition to demonstrations of maintenance methods an inspection was made of a large number of cars finished with cellulose lacquer systems.

Those present were P. V. C. See, chairman; W. S. Adams, W. C. Bolt, R. S. Bull, A. T. Clark, R. W. Cost, M. R. Hanna, J. M. Hipple, W. H. McAloney, J. C. McCune, R. B. Smyth, J. P. Staples, C. W. Squier and H. S. Williams.

Work decided upon for existing and new standards included two new brakeshoes for A.R.A. contours, reducing of maximum journal box width $\frac{3}{32}$ in., increasing minimum width of standard journal bearings $\frac{3}{32}$ in. and revision of demensions for journal bearing wedges and bearing and wedge gages. A new specification for wool waste was determined on.

Subject No. 2 included a study of brake equipment. J. C. McCune, chairman of the sub-committee, made recommendations for hand-brake equipment that is to be proposed for standardization, and presented a miscellaneous method and practice to cover the installation and maintenance of air brakes.

In the study of car-painting methods R. S. Bull, chairman of sub-committee No. 3, presented a preliminary report for discussion. This was revised and added to. It is to be rearranged for consideration at the next meeting of the committee. This sub-committee, along with others interested in painting, is to make an inspection in Pittsburgh on April 19 of a large number of cars that have been finished with cellulose lacquer, some of which have been in service for two years.

The sub-committee on motor coach design and maintenance outlined an inspection schedule. This is to be amplified for presentation at the next meeting of the general committee.

A progress report was presented on gearing and gages to determine when gears and pinions are worn out. The committee on desirable changes in the boiler code reported on developments that have taken place looking to a rehearing on certain points unsatisfactory to railways.

A preliminary report by H. S. Williams, chairman of the sub-committee on modernization of car equipment, brought out extended discussion. This report is to be revised and added to for presentation at the next committee meeting. This sub-committee is also making an extensive study of car lighting. R. W. Cost of the Westinghouse Lamp Company outlined various things that should be considered and reported on in this study.

Subject No. 8 includes the development of a miscellaneous method and practice on motor leads, connectors and supports. R. B. Smyth, chairman of the sub-committee, presented a progress report. Some changes were decided upon which will be made so that the final report can be presented for further consideration.

Manufacturers' Engineering Committee

A MEETING of the manufacturers' engineering committee which has been considering sizes, types and weights of cars to meet average city and interurban conditions was held at association headquarters on March 29.

Consideration was given to the draft of a report outlining the purposes and conclusions of the committee. Drawings of typical cars embodying the recommendations of the committee have been prepared. It is planned to include in the report the presentation of data from the experience of various properties showing instances of increased revenue or decreased expense resulting from the operation of improved modern cars. Another section of the report will analyze the age of electric railway equipment now in service.

New Members Elected

ELEVEN company and associate members and 98 individual members were elected at the meeting of the American executive committee held on March 26. The new company and associate members follow:

Operating Companies

Pacific Northwest Traction Company, Everett, Wash.

Wheeling Public Service Company, Wheeling, W. Va.

Associate Members

J. Rowland Bibbins, consulting engineer, Washington, D. C.

Gulick-Henderson Company, Inc., New York, N. Y.

Manufacturer Companies

The Arco Company, Cleveland, Ohio.

Dayton Rubber Manufacturing Company, Dayton, Ohio.

Doyle, Kitchen & McCormick, Inc., New York, N. Y.

Fageol Motors Company, Oakland, Cal.

Mack-International Motor Truck Corporation, New York, N. Y.

Mack Motor Truck Company, New York, N. Y.

Mack Trucks, Inc., New York, N. Y.

The News of the Industry

Utica Fare Issue Aired

Hearing was continued on March 31 by the Public Service Commission on the petition of the Utica Lines of the New York State Railways for permission to charge a 10-cent cash fare and 7½-cent ticket fare.

The entire day was devoted to cross-examination by Milo R. Maltbie, the expert engaged by the city, of H. C. Throop, who made the appraisal of the company's property, and J. M. Joel, the auditor. Mr. Maltbie questioned both witnesses at length on their testimony.

At the opening of the hearing Warnick J. Kernan, representing the company, suggested that the petition of the company for a temporary increase in fare pending determination be held in abeyance for the present, in view of the fact that there seemed to be some doubt as to the power of the commission to grant a temporary rate under the public service commission law.

Corporation Counsel Clarence E. Williams filed with the commission on April 1 an answer to the company's petition for a temporary increase. He argued that it should not be granted until after there had been opportunity for investigation, and that if the temporary increase were granted and it were later found not justified there would be no adequate remedy to recover the increased fares paid in.

Hearings were started on March 10 by the Public Service Commission on the petition of the New York State Railways for permission to increase fares in Syracuse and vicinity to 10 cents cash and 7½ cents for ticket fares. After introduction of testimony by the company to show that the present fare did not yield an adequate return on the investment an adjournment was taken.

Public Ownership of Boston Elevated Suggested

There is considerable doubt on Beacon Hill that the proposed legislation to extend the public control of the Boston Elevated Railway, Boston, Mass., 30 years will be enacted this year. The opposition is strong and may result in reference to the next general court. Winthrop Coffins, who is one of the public trustees, is opposed to the bill. He advises the Legislature to go slow, contending that there is no urgency. The Boston Chamber of Commerce has gone on record in favor of the 30-year extension. Senator Abbott B. Rice of Newton, who is prominent in financial circles, is opposed to the bill. He has a new plan which he presents as follows:

I have always been opposed to public ownership of any business, but this is an extraordinary situation. The state is already in the street railway business, but finds some difficulty in extricating itself; then why not face the situation and make the best of it? Some one may question the above statements. So let me make it perfectly clear. Let the state take over the road by eminent domain. Pay for the road by issuing 30-year bonds on a basis of 3.8 per cent. To continue under state control the carrying charges will be more than 5½ per cent on the capital invested. By using the state's credit, about $1,800,000 is annually saved in the carrying charges on invested capital.

This amount put into a sinking fund at 4 per cent will total $105,000,000 in 30 years. If additional capital goes into the road it will have the same relative result. The sinking fund will practically retire the bond at the end of 35 years and the state will own the Elevated outright, and it will not have cost the commonwealth one dollar.

I offer this solution only as a substitute for a 30-year extension of public control. Knowing these facts, no legislator in my opinion can justify his action in voting for 30 years of state control.

There are many legislators who favor a ten-year extension of public control, provided this extension will yield annually the $1,000,000 additional capital which it is claimed the Elevated must have during the next ten or twelve years.

I suggest the following plan to go into effect as of July 1, 1926, provided that on or before that date the common stock holders agree to accept in place of the present cash dividend of 6 per cent a dividend of 4 per cent in cash and 2 per cent in new stock. The 2 per cent of stock given to the stockholders is paid for out of the fund which is at present set up from earnings to pay the 6 per cent dividend on the common stock. This gives the Elevated $475,000 a year from the sale of new stock. The trustees will have no difficulty in selling an equal amount of bonds on a basis of 5½ per cent or possibly 5 per cent. This plan provides $950,000 a year. The management claims that this new capital is to be used for rolling stock, power and shop equipment, and other miscellaneous items, which will bring about operating economies of $400,000 a year. This saving, treated as new capital, gives the Elevated more than $1,000,000 during the period of public control, and at a rate of less than 6 per cent. This solution of the Elevated problem would be fair to the car rider, to the state and to the stockholder.

The City Council of Boston, Mass., has joined the opposition to the proposed 30-year extension of the public control of the Boston Elevated Railway. The Council has voted to instruct the city law department to oppose the bill before the Massachusetts Legislature.

Competition Unlikely at Des Moines

Council Elected in Iowa City on March 29 Realizes Futility of Competitive Systems—Railway Announces Operation of Bus in Co-ordinated Service—Railway Earnings Now in Red

RE-ELECTION of a majority of the Des Moines City Council at the polls on March 29 practically assures that the Des Moines City Railway will have no bus competition in the next two years. Councilmen Mitchell, Morris and Jenney, who were all returned to the city hall for another term, were members of a Council strongly anti-bus in sentiment, and regardless of the attitude of the two new Councilmen, Fred H. Hunter and Frank Mathis, it is believed that no outside bus concern will stand a show of getting a franchise.

Officers of the Capital City Motor Coach Company, organized last fall, said that application will be made to the new Council for a permit to operate on Des Moines streets not paralleling the street car lines and on highways where car service is not available. However, this is the same organization which abandoned plans to submit its request to the former City Council several months ago after sounding out the views of the members on a similar proposal.

Announcement of F. C. Chambers, president of the traction company, that two cross-town bus lines will be established within the next 30 days, with full transfer privileges between cars and buses, is an added reason for the belief that the Council will sanction no bus service which might even tend to cripple the city railway. City officials and residents in general are of the belief that there is not room in the city for two independent transportation systems, and that no foreign company can furnish service which cannot be better provided by the traction company. A previous experience with street cars and "jitneys" is still fresh in the minds of the people.

The only cloud on the transportation horizon at present is the report that Fred Hunter, Mayor-elect, may appoint H. W. Byers corporation counsel. Byers, who held this position under a former administration, conducted a continuous attack on the railway. One of his hobbies was 5-cent fares. He insisted that the company should have stuck to that figure during the war regardless of the increase in the price of materials, labor and everything that went into traction operation. Byers' appointment would probably be the signal for a fresh onslaught on the traction company.

The railway, after seeing its stabilizing fund sink "into the red" to the extent of $73,000 first with 8 and then with 9-cent carfares, had the pleasure of reporting that the auditor's figures for February showed a balance of about $70 in the fund as of Feb. 28. Ten-cent fares, which went into effect Oct. 1, 1925, are responsible for the change.

No ruling is expected from the Iowa Supreme Court before May on the appeal of the railway from the decision of Judge Joseph Meyer of the Polk County District Court. The court held that the working agreement between the company and the union is binding as regards the clause requiring the company to keep two trainmen, a motorman and a conductor, on each car in service.

The company maintained that such an agreement is against public policy, and prevents the company from instituting economies which would result in lower fares. The company is operating four one-man model cars, but maintains a "conductor" on each car to comply with the agreement, although the operator collects the fares.

The recent demand of the union for a 6-cent hourly increase with time and a half for Sunday and holidays was met with a flat refusal on the part of President Chambers. The traction head pointed out that granting the increase would result in increased fares or a decided reduction in service. He emphasized that the company would not go above the present 10-cent fare, neither would it curtail service below the standard demanded by the public. A conference between the union leaders and Mr. Chambers proved fruitless, and no meetings have been scheduled since.

Jamaica Central Railways Will Continue Long Island Service

Plans have been announced for continuation of service on three traction routes in Long Island which it was planned to abandon. The lines to be rescued were controlled by the Long Island Electric Railway. They are the Jamaica to Far Rockaway line; Jamaica to Belmont Park, serving Hollis, Bellaire and Queens Village, and the Jamaica to Brooklyn line, tapping the growing South Ozone Park section.

Some few weeks ago when it was learned that the Long Island Electric Railway had decided to quit service and sell the lines for scrap, Park A. Rowley, vice-president of the Bank of the Manhattan Company, traveled over the lines to establish for himself the place they hold in the growth of the Greater Jamaica district.

Following a series of conferences with H. Pushae Williams, president of the First Mortgage Guaranty Company, Long Island City, it was decided to form the Jamaica Central Railways, Inc., and application for a state charter was promptly granted at Albany, with a capital of $200,000 and Mr. Williams as president.

John H. Hanna Complimented

In transmitting to stockholders the report of the directors of the Capital Traction Company, Washington, D. C., for the year ended Dec. 31, 1925, George E. Hamilton informed them of his retirement from the office of president and paid a very fine compliment to his successor in office, John H. Hanna. Mr. Hamilton said:

> Mr. Hanna needs no introduction to the stockholders. As chief engineer, and for the last ten years as vice-president in charge of operation, he has devoted himself wholeheartedly to the service of the company, and his efforts, ability and integrity in service deserve from you that confidence and support which was so generously extended to me during my term of office.
>
> I feel that all of us can rest content in the knowledge that the onward progress of our company will be, under his administration, advanced to higher levels of useful accomplishment.

As indicated previously in the ELECTRIC RAILWAY JOURNAL Mr. Hamilton continues with the company as chairman of the executive board and as general counsel.

Taxpayers Will Carry to Court Seattle & Rainier Purchase Referendum

Certification to the City Council of Seattle, Wash., of petitions calling for a popular referendum on the purchase of the Seattle & Rainier Valley Railway by the city of Seattle will be held up until six taxpayers who are fighting the submission of the question to the city at large have an opportunity to carry their case to the State Supreme Court.

The six were given an opportunity to appeal their case before the petitions are certified when Superior Judge J. R. Ralston of Clallam County, sitting in Seattle temporarily, modified an order which dissolved a prior order forbidding City Comptroller Harry W. Carroll to certify the petitions. In modifying the order he set forth that the six plaintiffs should have a chance to ask the Supreme Court for a writ of review before the certification was made. The order of dissolution will stand, the judge said, but the clerk has been instructed not to enter it for ten days, this giving the attorneys for the taxpayers time to carry their case to the higher court.

Attacking the referendum petitions as illegal and lacking sufficient signatures, the taxpayers won a temporary order directed at Comptroller Carroll issued last January. The taxpayers' group also attacked the referendum on the ground that the bond issue by which the car lines would be purchased would not be a general obligation of the city, but rather a levy upon the municipal railway. They argued that the City Council, and not the people, was the proper authority to authorize the issue or turn it down.

Plans for Illinois Road Being Matured

Construction work may be begun soon by the Quincy & Northeastern Electric Railway on a line to run from Quincy to Monmouth, Ill. A certificate of convenience and necessity has been issued by the Illinois Commerce Commission. The route covers about 80 miles.

The new company has offices at 104 South Clark Street, Chicago. It was organized a year ago and filed its application with the Illinois commission, but the case was not reached for hearing until last fall and the commission's order has just been issued.

The company was incorporated with a capitalization of $1,200,000, consisting of 4,000 shares of preferred and 8,000 shares of common stock. The incorporators are: Charles H. Petsch, New York; E. C. Helms, New York; Charles V. Howard, Chicago; Edward D. Parmalee, Chicago, and D. E. Brainard, Chicago. Mr. Petsch is president, Mr. Brainard vice-president and Mr. Howard secretary-treasurer.

Mr. Petsch was the chief witness for the company at the hearings before the Illinois commission. The steam railroads serving the territory, principally the Chicago, Burlington & Quincy, opposed the granting of the certificate. Mr. Petsch testified that a complete survey of the proposed line had been made by Guy Lower, Chicago, who had been recommended to the company by the American Association of Engineers. The president also stated that detailed estimates of the construction costs had been made and that this would be approximately $25,000 a mile, exclusive of right-of-way, sidings, stations, etc. He estimated that the completed system, ready for operation, would cost about $3,250,000. He says that the necessary capital had been underwritten by unnamed New York interests. The preliminary work, he testified, had cost $19,042, advanced to the company by him. These expenditures included $3,500 for Mr. Petsch's personal expenses. No subscriptions for stock were to be solicited from the public along the route proposed to be served, he testified.

Mr. Petsch said that no decision had been reached as to the kind of motive power to be used. It is understood, however, that the use of electricity is being considered, with the Keokuk dam as a source of power supply.

Paving Bill in New Jersey Lost

Governor Moore of New Jersey vetoed Senator Abel's paving bill designed to relieve railway companies of paving obligations. The Legislature, on recess now until June 22, failed to repass the measure over the Governor's veto.

Rhode Island Power Companies Reach Agreement

An agreement has been reached by various electric utility interests in Rhode Island under which the way was opened in the Legislature for the creation of the United Electric Power Company to dispose of surplus energy available in the plants of the United Electric Railways, Providence. The measure, as embodied in the Peck bill, had been opposed by utilities in Providence and Newport on the ground that the retail market for electricity might be invaded by the United company under this bill, and the measure was also opposed on the score of possible outside control of local utilities resulting from the granting of wide powers to the United. Counsel for the several companies agreed, however, to the so-called Clifford bill, under which the new company will have the right to sell electricity only to railroad, street railway, electric light, power and transmission companies. A certificate of public necessity will be required before the company can sell electricity at retail.

Indianapolis to Convert 100 Cars

Plans are being developed by the Indianapolis Street Railway, Indianapolis, Ind., to convert 100 semi-obsolete cars into modern carriers. In addition, it is probable that considerable extensions of bus lines will be undertaken, as well as the completion of the bus station at the traction terminal. Conversion of the cars is expected to cost approximately $250,000. Bus development in 1925 cost $200,000, and it is reported that the expenditure on this part of the company's service will in all probability be doubled this year.

Final Hearing on Cleveland Grant Expected on April 5

Cleveland's City Council at its meeting on Monday evening, April 5, is expected to dispose of all proposed amendments to the existing franchise ordinance of the Cleveland Railway.

One of the amendments proposed, which has been before the committee on street railways of the City Council for consideration, would include in the general amending franchise a provision affecting the relations between the company and its employees. The company has stated that it will decline the grant if such an amendment is included. The city law department has rendered an opinion sustaining the position of the company that such a provision has no place in a franchise contract.

W. G. Lee, president of the Brotherhood of Railroad Trainmen, in an interview, gave as his opinion, based on his 30 years official connection with the brotherhood, that any such provision should not be in the contract.

The Council committee on street railways has been considering changes in the railway grant since July of last year. Extended reference will be found on page 589 of this issue of the ELECTRIC RAILWAY JOURNAL to suggestions made regarding readjustments in the terms of the grant.

Coral Gables Rapid Transit Line Scheduled for Operation in April

One of the finest interurban rapid transit systems in America, linking Coral Gables, the "Baby City" of the United States, with downtown Miami, Fla., is finished as far as track laying is concerned. It is expected that next month the system will be in operation delivering passengers from Coral Gables to Flagler Street in Miami in twelve minutes. To this end, F. W. Webster, vice-president and executive manager of the Coral Gables Corporation, as noted previously in the ELECTRIC RAILWAY JOURNAL, placed an order with the St. Louis Car Company for nine de luxe type vehicles. When these cars are delivered at Coral Gables the transportation facilities of the George E. Merrick development will rank among the most modern and luxurious in the world.

The start of the Coral Gables Rapid Transit system marks more than an ordinary rapid city development and an engineering achievement. Four years ago Coral Gables was still a fruit grove, "so far from the city of Miami that nobody will settle there." George Merrick, its founder, visualized what the city was destined to become and decided in his mind the routes of the systems of communication which play so essential a part in any great city or suburban development. Its systems of rapid transit designed and already in operation are fully in keeping with the high standard set by the other factors in the development.

With the rapid transit line, the Flagler Street line, the new station on the Florida East Coast Railroad and the Coral Gables bus system, the city of Coral Gables will shortly be provided with ample transport facilities. In addition to these four systems, the industrial waterway and other arms of the Coral Gables canal network will shortly be in operation, and it is expected that these will carry a large amount of both freight and pleasure craft traffic.

It is after all a mighty significant thing that the installation of an electric railway was regarded as essential to the maturity of the plans for the development of this unusual community undertaking.

Commission Changes in New York

Proposed Departmental Reorganization Will Give Governor Added Power of Removal—Minority Leaders Charge Transit Commission Would Become Merely a Bureau in Department of Public Service Under Plan Suggested

AT THE general election in 1925 the people of the State of New York approved an amendment to the state constitution providing that the 150 or more departments, divisions and bureaus of government should be reorganized into not to exceed twenty civil divisions.

A non-partisan committee, under the chairmanship of Charles Evans Hughes, former Governor of New York State and ex-United States Supreme Court Justice, spent many months mapping out a general plan of reorganization. This plan, as submitted to the Legislature, provides for the ultimate grouping of the civil functions of government into eighteen departments.

The department of public service is to be formed by the consolidation under one administrative head of the present Public Service Commission and the Transit Commission. At present the Transit Commission regulates transit in New York City only, while the Public Service Commission deals with the regulation of other public utilities throughout the state.

The chapter or article dealing with the public service department arranges the organization into two branches or divisions:

The state division, the head of which shall be the present Public Service Commission, consisting of five members, to continue to be appointed for terms of ten years each and to receive an annual salary of $15,000.

The metropolitan division, the head of which shall be the present Transit Commission, or its successors, to consist of three members to serve for nine years each.

As the terms of office of the present transit commissioners all expire on April 16, 1926, and their terms of office are now fixed at five years each, an amendment to the public service commission law has been presented to the Legislature to take effect April 15, providing that the terms of office shall be nine years and that the members shall be so appointed that the term of one will expire at the end of each three years.

Members of both the Public Service Commission (the state division of the new body) and the Transit Commission (the metropolitan division of the new body) are to be appointed by the Governor, by and with the advice and consent of the Senate.

Practically the only change effected by the reorganization is in the term of office of the transit commissioners and the additional removal power vested in the Governor in relation to members of the Public Service Commission. He now has the right to remove a member of the Transit Commission on charges and an opportunity to be heard. In 1921, however, the law was so fixed that a member of the Public Service Commission could be removed only on a two-thirds vote of the Legislature in the same manner as judges are impeached. This privilege was deemed by the Hughes committee to be out of all proportion to the emoluments of the office, so under the provisions of the law creating the new department of public service, the Governor is accorded the right of removal of both the public service commissioners and the transit commissioners, on charges and the right to be heard.

All of the functions, powers and duties and employees of the present Public Service Commission and of the Transit Commission will, when the reorganized plan goes into effect, Jan. 1, 1927, be transferred bodily into the newly created department.

Charging that the Hughes reorganization commission and the Republican leaders have sought to play politics with the transit situation in New York State, Minority Leaders Bernard Downing and Maurice Bloch of the Senate and Assembly have introduced bills to preserve to the city of New York the right to regulate its own transit problems.

One of the measures abolishes outright the present Transit Commission and transfers all of its powers, functions, jurisdiction, appropriations and employees to the Board of Transportation. The other bill transfers all of the powers, duties, functions and employees of the Transit Commission to the Board of Transportation, but does not abolish the Transit Commission itself.

The passage of either bill would give to the Board of Transportation the right to issue permits for the operation of bus lines without going to the Public Service Commission for approval.

Fares in Baltimore an Election Issue

Electric railway fares in Baltimore have been brought into a campaign being waged for the Democratic gubernatorial nomination in Maryland. Gov. Albert C. Ritchie is a candidate for renomination and William Milnes Maloy also is seeking the support of the party. Mr. Maloy is a former chairman of the Maryland Public Service Commission and also served as people's counsel. In his campaign addresses Mr. Maloy is promising, if nominated and elected, to seek lower car fare rates in Baltimore.

Twenty-two Miles Abandoned in New York State

With the approval of the Public Service Commission the Chautauqua Traction Company on March 22 abandoned 22 miles of trackage between Ashville and Mayville, N. Y. The route has been in operation for 23 years, running for some years at a loss. Service between Mayville and Westfield was abandoned last year.

The West Ridge Transportation Company the day after the discontinuance extended its bus line, which has been operating for some time between Westfield and Mayville, to Chautauqua. In addition, the Jamestown Street Railway has started service between Jamestown and Ashville via Celoron and Beechwood. One-man cars will be operated between Jamestown and Ashville as on all the other lines of the Jamestown Street Railway, affiliated with the Chautauqua Traction Company. Buses have been carrying the school children of the Chautauqua school district along the route between Ashville and Chautauqua since March 15. They are operated under contract with the School Board by C. L. Gorman of Ashville.

Holiday Pass Plan Under Consideration in Cincinnati

The Cincinnati Street Railway, Cincinnati, Ohio, has under consideration a proposal to adopt the holiday ticket plan, which is now in vogue in Pittsburgh, Pa. Walter A. Draper, president of the railway, said that he had been watching the Pittsburgh experiment with interest. Recently Mr. Draper received a letter from the Federated Civic Association advocating the adoption of the plan. The association contends that it would serve to introduce more friendly relations between the company and car rider and stimulate business during the lean hours. Whether the Cincinnati company will adopt the Pittsburgh plan in its entirety has not been determined. In that city the railway company sells the tickets for 25 cents, good all day and usable as often on the holiday as bearer wishes.

Connecticut Men May Ask More Pay

Employees of the Connecticut Company, New Haven, Conn., are said to be planning to repeat their petition to the company for the same scale of wages and the working conditions asked last June, a request that was rejected by the board of arbitration called upon to settle the differences between the company and the employees.

The state conference board of the employees' organization has voted to submit the proposed form of agreement to the company in April rather than in June as has been the custom. This will enable hearings to start early and have the question settled before the present contract agreement with the company expires in June.

The proposals to be made to the company are based on an eight-hour day, and provides for the following schedule over a period of one year: the first three months, 70 cents an hour; the next nine months, 72 cents an hour, and thereafter, 75 cents an hour.

The rates now in force provide 53 cents, 56 cents and 60 cents for the operators of two-man cars, with a 7-cent differential for operators of one-man cars, for the same periods during one year.

One-Man Car Case at Dayton Appealed

Appeal has been made from the decree of United States Judge Smith Hickenlooper at Cincinnati, Ohio, enjoining the city of Dayton from enforcing against the City Railway and others the provisions of an ordinance passed by the Dayton City Commission requiring the street railways to operate cars with two men. The decree was entered in the suit of the City Railway and others against the city of Dayton.

The plaintiffs alleged that after the city had passed an ordinance providing for one-man cars and the railways had complied with the provisions, a referendum election was held directing repeal of the permissive legislation and the passage of an ordinance requiring the companies to operate two-man cars and that the effect of this was to deprive the companies of property without due process of law and to infringe upon their contractual rights under the original ordinance.

The city of Dayton in its appeal alleges that Judge Hickenlooper erred in holding that the second ordinance infringed upon the rights of the city railways. It asks the Appellate Court to reverse the decree entered by the court below.

Appeal on Electrification Ordinance in Buffalo

The Buffalo, N. Y., City Council has taken an appeal from the decision of Supreme Court Justice Crosby, who held that the railroad electrification ordinance is invalid. The ordinance does not require the railroad lines entering the city to electrify their roads, but prohibits the use of steam locomotives. Railroads fighting the ordinance say electrification of their lines in the city of Buffalo would be forced upon them if steam locomotives were prohibited. The cost of such electrification, the railroad interests say, would exceed $100,000,000. The case will be argued before the Appellate Division at the spring term. The city may appeal to the New York State Court of Appeals and the Supreme Court, if necessary, to test the validity of the measure.

Artists, Sharpen Your Pencils

Any artist residing in the United States has the opportunity to make a cover to be reproduced in the Sesqui-Centennial number of the "Traveler," published by the Philadelphia Rapid Transit Company, Philadelphia, Pa. The most suitable design carries with it a prize of $500. The design can be either descriptive or pictorial and must possess some theme suggestive of the spirit of city transportation in the year of the Sesqui-Centennial Exposition.

J. Rowland Bibbins Retained in Philadelphia

Mayor Kendrick of Philadelphia has retained J. Rowland Bibbins, Washington, to aid the city in negotiating an operating lease of the Broad Street subway with the Philadelphia Rapid Transit Company. The Mayor made the announcement public along with a communication to Thomas E. Mitten of the railway.

Mr. Bibbins aided the city in its investigation of the transit company's books when it prosecuted a protest against the 8-cent fare, two tokens for 15 cents, before the Public Service Commission.

Mr. Mitten's statement regarding the subway lease was sent to Mayor Kendrick several weeks ago. In it he left an impression he expected to obtain the free use of the subway. In his reply the Mayor said:

> I am still convinced that a proper and satisfactory lease cannot be brought about by public statements or exchange of written communications made in advance of conference table discussion and negotiations.

Associates of Randal Morgan in Indianapolis Mourn His Passing

News of the death of Randal Morgan was received in Indianapolis as a distinct shock. He took a financial interest in the Indianapolis Street Railway in 1899 when he became associated with Philip J. McGowan. This business relation continued until Mr. McGowan's death in 1911. Mr. Morgan was interested in the erection of the Indianapolis Traction Terminal station in 1902. He and his associates then started on a wide scale to develop interurban lines in Indiana. He became interested in the Union Traction Company and the Terre Haute, Indianapolis & Eastern Traction Company. His last visit to Indianapolis was about two years ago. Robert I. Todd, president of the Indianapolis Street Railway, and Joseph A. McGowan, secretary of the company, both issued statements about the death of Mr. Morgan in which they mourned the loss of a friend and business associate.

New York Urged to Abandon Operation of Projected Subways

Mayor Walker of New York has been requested to stop the letting of contracts for the new municipal subway system now under construction by the city and intended to be run by the city in accordance with plans made by former Mayor Hylan. The protestant is the Civic Council of Brooklyn, composed of 96 organizations in that borough. The council wants the Mayor to open negotiations with the Brooklyn-Manhattan Transit Corporation and the Interborough Rapid Transit Company for the operation of the new lines. It suggests that if this is to be done the routing of the new lines into Brooklyn and Queens will have to be changed so that the new system will be connected with and at certain points merged with the existing lines. It also urges that the private companies can probably be induced to equip the new lines if the administration will abandon its plan for municipal operation.

News Notes

Railway Man Honored—Hotel Lowry, named for Horace Lowry, president of the Twin City Rapid Transit Company, is to be erected at a cost of $1,250,000 by the Arcade Investment Company of Minneapolis at Fourth and Wabasha Streets, St. Paul, by 1927. Mr. Lowry is head of the Arcade company, which already operates the large Lowry office building in the same block.

Front-Entrance Plan for St. Louis.—United Railways, St. Louis, Mo., has altered the seating arrangement of 150 cars, to provide operation of the cars under a front-entrance rear-exit plan. The aisles have been widened to facilitate the movement of passengers from the front to the rear of the cars. A longitudinal side seat extending half the length of the car is placed on the right of the front end and a similar seat on the left side at the rear. The regular crosswise seats are maintained on the sides of the car not thus rearranged.

Commission Approves Reduced Baltimore Rates.—A voluntary reduction in some of the rates between Baltimore and Annapolis has been made by the Washington, Baltimore & Annapolis Electric Railroad. The new rates have been filed with the Maryland Public Service Commission and approved by that body. The company reduces the round-trip rates if bought in books of five or ten. The present rate is 90 cents one way or $1.68 round trip. Under the old rates five round trips cost $8.40 and for ten round trips the cost was $16.80. But under the new rates books of five round trips are sold for $7.40, a saving of $1, and books of ten at $14.10, a saving of $2.70. The new tickets are good three months from date of purchase.

Fare Schedule Approved.—The Public Service Commission has approved the passenger service schedule of the New York, Westchester & Boston Railroad on its newly constructed line extending from Larchmont Gardens (Mamaroneck) to Mamaroneck. It has also approved one-way, 46-trip and 60-trip ticket fares provided for transportation between points on the new line and other local points.

Hearing Set on Fare Petition.—The Fresno Traction Company, Fresno, Cal., has applied to the Railroad Commission for an increase in its fares, alleging that it had an operating loss of $4,056 during 1925 as the result of its first year's operation under its resettlement franchise. The present fare is 6 cents. The commission has set the application for hearing before Commissioner Harley W. Brundige at Fresno June 1, when the complaint of the city of Fresno to require the utility to extend its tracks to the Fink-Smith tract will be heard.

Fare Increase in Elkhart Indicated.—John McCardle, chairman of the Indiana Public Service Commission, after a hearing, indicated recently the commission would grant the petition of the Chicago, South Bend & Northern Indiana Railroad to raise its local fare in Elkhart, Ind., from 5 to 7 cents. Statistics were presented to show the company operated at Elkhart last year at a net loss of $10,000, including interest on the capital invested. No objection was made to the petition at the hearing.

Seeks Relief from Resurfacing Costs.—The Wheeling Traction Company, Wheeling, W. Va., has submitted a proposal to the Wellsburg Council looking toward relief of paving costs on Charles Street and the discontinuance of the railway on that thoroughfare. It was a counter proposal and in answer to the proposal which the Wellsburg Council submitted to the traction officials several days ago asking that they pay for seven-thirtieths of the cost of resurfacing the principal street. The first proposition offered by the Wheeling Traction Company was to discontinue its Charles Street line and substitute a bus service. Included in the recent proposition of the traction company was the clause that the company would pour a concrete foundation between the rails and ties to within 2 in. of the surface and that it would weld all the rails.

Group Insurance in Baltimore.—The United Railways & Electric Company, Baltimore, Md., has taken out group insurance on its 5,000 employees, the total amount being $5,000,000. In carrying out the plan the United will pay a part of the premium and the remainder will be paid by the employees. It has been announced, however, that until the employees signify their intention to participate in the plan the entire premium will be paid by the company. Each employee, under the plan, will be insured for $1,000. About 50 per cent of the employees are engaged in occupations that would make it difficult for them to obtain insurance under ordinary circumstances. Neither the pension plan nor the company insurance plan is affected by the new insurance, in which all executives and officials may participate.

Foreign News

Further Electrification in Java Planned

Electrification of the Manggarai-Buitenzorg railway line in Java, Dutch East Indies, has been sanctioned by the government, according to recent reports. Plans for the project are now completed, execution of the work has already been commenced and the necessary material will be ordered soon. It is expected that the electrification of the entire line will be completed in two years. An appropriation of about $40,000 has been made for preliminary work in connection with the electrification of the Poerwakarta-Bandoeng line, which may be electrified next.

Power Station of London Underground Extended

Extensions of London's underground electric railways are necessitating additions to the plant in the power station at Lots Road, Chelsea. This station, one of the largest in Great Britain, contains seven turbo-alternators of 6,000 kw. each and three of 15,000 kw. each. A fourth 15,000-kw. machine is now under construction, and when this is completed the generating capacity of the power station will be 102,000 kw.

The steam generating plant comprises 64 boilers, each capable of producing 16,000 lb. of steam an hour at a pressure of about 200 lb., and eight boilers each having a capacity of 40,000 lb. an hour. Two boilers of about 50,000 lb. an hour capacity are under construction and will be put in operation during the present year.

The present maximum load on the power station is about 70,000 kw. It is estimated that in five years time the total demand will be about 100,000 kw. To provide for this additional load it is planned to install large turbo-alternators of 15,000 kw. each in place of the existing machines of 6,000 kw. each. All the new turbines are designed so that they can at a later date operate with steam at 275 lb., at which pressure all the new boilers will be capable of working. By operating at the higher steam pressure reductions in coal consumption will be effected.

The amount of coal burned at Lots Road during 1925 was about 264,650 tons, this being at the rate of about 2 lb. per kilowatt-hour delivered.

Underground Extension Opened in Spain.—In Madrid, Spain, was completed and opened for traffic recently the Sol Quevado section of the Alphonse XIII underground electric railway. This line is an extension of the Sol-Venta section, the two forming a railway which runs from the east to the west of the city, a distance of nearly 4 miles.

Municipality May Buy Tramway Undertaking.—It was decided recently by the City Council of Newcastle-on-Tyne, England, to purchase the Tyneside Tramways & Tramroads Company at a cost of £96,000. The deal is subject to the Council obtaining Parliamentary power to operate the company's lines. The Tyneside company's tramway lines comprise about 11 miles of track, while those of the Newcastle corporation are about 35 miles. If the purchase is consummated it is expected that the two systems will be co-ordinated.

Subway to Be Constructed at Milan, Italy.—Definite plans for the construction of a subway in Milan, Italy, have been under discussion for some time. Two routes having the approximate lengths of 3.8 miles and 3.6 miles are planned. The total cost of the project is estimated at $8,000,000. In granting the concession, preference will be given to the group which offers not only the most favorable financial conditions but also the greatest frequency of trains.

Recent Bus Developments

Bus Operated Over Former Railway Route in Pennsylvania

Application was made on March 25 to the Public Service Commission by the North Branch Bus Company, a new concern, for a certificate to operate bus lines over routes formerly served by the North Branch Transit Company, Bloomsburg, Pa. Trolley service was suspended on that line on March 2, and a bus service was started by Douglas Ford, formerly connected with the management of the railway. This railway system of 26 miles was bought by the Hazleton Auto-Bus Company at a recent sale. The North Branch Transit Company succeeded the Columbia & Montour Electric Railway in 1911. The line was placed in receiver's hands in 1915.

Oklahoma Railway Fights Competition

Receivers for the Oklahoma Railway on March 25 applied in the federal court in Oklahoma City, Okla., for an order to restrain the People's Transit Company from operating jitneys and buses on the streets of Oklahoma City in competition with the railway. For several weeks the People's Transit Company has been operating several jitneys on the streets of Oklahoma City. It recently secured an injunction in the district court restraining the city authorities from enforcing an ordinance which requires a license fee of $15 a year for each seat in a bus or jitney operated for hire, and prohibits buses from operating on streets where there are street car lines or within two blocks thereof. The ordinance was held invalid by the court. The railway is throwing the matter in the federal court on the grounds that the receivers of the company are officers of the court; that the court also has control of the railway property and should protect it against destructive competition.

As a further means of meeting the jitney situation the Oklahoma Railway began operation, on March 26, of a new bus line which will be in direct competition with cars operated by the People's Transit Company on East Tenth Street. The new line runs from the business section north on Robinson to Broadway Circle and east on Park Place, which is one block south of Tenth Street.

Hearings Held on Bus Bill

Committee of Congress Goes Into Executive Session to Consider Future of Cummings Measure, Designed to Place Interstate Bus and Truck Carriers Under Federal Jurisdiction

HEARINGS on the bill to place interstate bus and truck traffic under the jurisdiction of a federal body were adjourned in Washington on March 29. They may be reopened, but opinion in administration circles appears to be that the Cummings measure is lost for the time being, if not for all time.

At the last session highway interests and the motor haulage people stressed the point that the interstate business was accidental due to the geographical location of industry. To all practical purposes the extent of this traffic was nil compared with the country's total highway tonnage. Counsel for the steam railroads were primed to present their case, but the committee decided to go into executive session before hearing this appeal. That in itself might be considered a bad omen for the progress of the bill.

Provisions of the proposed bill have been heralded far and wide. Still it will do no harm to recapitulate some of the salient points. They follow:

The bill divides the motor carriers into two main classes. Class A covers carriers operating between fixed termini or over a regular route and Class B the so-called irregular carrier. Under the terms of the bill the state regulatory bodies, acting with concurrent jurisdiction, hear and grant certificates of public convenience and necessity after having given "reasonable consideration, among other pertinent matters, to available transportation service by railroad, or other existing transportation agency; to the character of service to be rendered by the applicant; to the likelihood of the proposed service being adequate, permanent and continuous, and to the effect which such service may have upon any other transportation agency, the continued operation of which is important to the community." Appeal to the Interstate Commerce Commission is provided in case of disagreement between states on a certified record made before the state or joint boards.

Very brief summaries of the testimony on March 22-25 were published in the ELECTRIC RAILWAY JOURNAL for March 27, page 567. Representatives of the electric railways had their inning on the third day. Mr. Storrs said that the electric railways were in accord for the bill, but that if any amendments were presented "we want to reserve the right to speak or file a brief." Among other things he said:

None can successfully assail the wisdom of government regulation of common carriers, whether local or national in character. Passenger carrying motor vehicles are now under regulation locally in 39 states, while rail lines are universally regulated by the states and nationally. Where engaged in interstate business, they are under regulation similar to that of the steam carriers. We believe that there should be the same regulations for all common carriers. To ask this Congress to permit one class of carriers to proceed unregulated while others are subjected to regulations would be equivalent to setting up a special class. This is contrary to every theory of our government, and I am sure it does not for a single instant meet with the approval of any member of this committee.

The decision of the Supreme Court on March 5, 1925, to the effect that states could not prohibit the operation of interstate motor carriers did much to destroy the efficiency of local transportation.

In so far as this bill relates to the motor truck situation, there has been much false propaganda spread about it. It has been repeatedly stated that if this bill became effective no truck could cross a state line without first having obtained a certificate of convenience and necessity. The fact is that under the provisions of this bill only a small part of the motor truck industry would be affected. That part would be only the common carrier vehicle.

I wish to emphasize particularly, however, the fact that there are now in operation many motor routes which give an essential public service, and these need protection from unregulated competition fully as much as if not more than the rail carriers. The public served by all essential agencies should have assurance that this service may become permanent through fair regulation and reasonable protection.

Among others who spoke on behalf of the electric railways were Dudley Farrand, A. R. Williams and C. B. Hammond. Each of these men told about the need for regulation as he saw it. In order to give an idea of the extent of interstate service by companies operating in territory served by his company Mr. Farrand pointed out that since the latter part of the summer of 1925 fifty-four companies or individuals had taken up this class of transportation service. These operators had 200 buses and covered a total of 2,525 route-miles. Their lines extended not only to New York but to Pennsylvania, with some lines running from Philadelphia to New York. Of this number there now survive 39 routes that total 1,716 miles on which 153 buses are operated.

Further, he said:

An actual count taken at the ferries between New York City and the Jersey side for a typical day shows that 717 bus trips were operated between New York City and New Jersey points, carrying 6,222 passengers. The average fare of these passengers is approximately 75 cents each, so that the revenue received by these buses a day is approximately $4,700. This means an annual revenue approximating $1,750,000.

Up to the present time interstate bus service between New Jersey and either New York or Philadelphia has been dependent upon the use of ferries, crossing the Hudson or Delaware River, to reach their metropolitan terminals. On July 4 of this year the new Philadelphia-Camden Delaware River bridge will be open for traffic. The vehicular tunnel connecting Jersey City with New York City will likewise be opened for traffic during 1927. The imminence of the availability of these two facilities makes even more necessary the immediate proper regulation of the interstate motor carrier.

Mr. Williams stated there were 146 buses doing interstate business out of Providence over 57 routes. Between Woonsocket and Blackstone there are 32 buses doing the business formerly carried on by a railway line.

The case for the bus men, or at least for the group included in the Bus Division of the American Automobile Association, was presented on March 25 by S. A. Markel, chairman of the Bus Division's legislative committee. In urging the immediate passage of the bill, Mr. Markel said that 38 states are now functioning under regulatory measures. Some of these have had regulation for ten or more years, giving the state commissions ample opportunity to assemble such facts and data as to enable them properly and constructively to regulate motor carriers. There was plenty of experience, he indicated, to warrant the belief that state commissions would function satisfactorily under interstate regulation. The Bus Division had no special interest in trucks, if in the wisdom of the committee it seemed desirable to separate the two forms of regulation.

Mr. Markel then presented a number of amendments. Many of these were merely to clarify the text, but one was intended to be retroactive to permit all operators who on March 3 were giving service to continue doing so.

Another Hearing on Reading's Appeal

Additional evidence in support of the Reading Railroad's application for permission to operate buses between Jenkintown and Wyncote, Montgomery County, and New Hope, Bucks County, in Pennsylvania, was submitted on March 26 to Public Service Commissioner Benn. The matter under consideration was one of several applications which the Reading Company intends to substitute for train service on its branch lines.

Protests were filed by the Philadelphia Rapid Transit Company, the Philadelphia Rural Transit Company, Warwick Township, the Reading Transit Company and individuals who possess certificates to operate buses in that section of the state.

The most important witness examined was E. D. Osterhout, passenger traffic manager of the Reading System. He said that in the last five years the passenger traffic on the suburban trains had decreased 30 per cent, due in a large measure to the individual operation of automobiles. The commutation service, however, had increased, due to the building operations in the vicinity of Willow Grove and at other points.

Officials of the company, considering the falling off in business, decided to withdraw these poorly patronized trains and substitute buses.

Another hearing will be held.

A Remedy Prescribed for Traffic Ills

Curing the ills of traffic congestion does not call for the elimination of the trolley car, according to an article by Carl Parker, manager of sales, bus division, Reo Motor Car Company, which appeared in the Indianapolis *Star* on Feb. 21, but it does call for the skip-stop plan in the majority of American cities. Skipping not just one intersection, but in some cases as many as five to ten, was advocated.

Mr. Parker is a firm believer in coordination of bus and trolley service carried to its logical conclusion. He believes that a policy of rapid transit for street car operation that would actually live up to its name would do much to eliminate the traffic disorders of the body politic in most of the more crowded communities of the country. Then in place of trolley car stops at every corner could be substituted a covering bus service, which would serve to gather up passengers along the right-of-way, transport them to the trolley stops and there permit them to transfer to the faster express service provided by the street car.

Continuing, Mr. Parker says:

> The plan means simply to speed up any carrier that otherwise becomes a stricture in the center of the street and obtain rapid transit, not just simply by increasing the velocity of the vehicles but by decreasing waiting time. To have a bus line intersecting a trolley line is not co-ordination fulfilled to its best advantage. Run the trolley cars as express service and also put buses on the same streets to stop at every intersection—but at the curb.
>
> While the radicals are claiming that buses can efficiently replace the trolley, those who cry it the loudest have studied it comprehensively the least and know the least about it.
>
> Don't eliminate the street car—just speed it up. Give it a chance to develop its efficiency. It has a very definite place in the transportation picture of every city which is proud of its industrial institutions.
>
> In some cities in the United States the trolley car has never been allowed to develop its greatest efficiency. It is a better vehicle than most of us think it it because we have never had the chance to see it operate at its best. Give the trolley car the chance it has been yearning for and you automatically put the motor bus in its best environment.

Bus Program at Buffalo to Proceed

The operation of two new bus lines, the extension of an existing bus line and the scrapping of two railway lines in Buffalo will probably be authorized by the Buffalo City Council during April. This was indicated after a public hearing on the application of the International Bus Corporation, a subsidiary of the International Railway, for permission to operate additional bus routes in the city. The company's application of last summer was revived following the collapse of the Howe 5-cent bus proposals.

Three members of the Buffalo City Council have indicated their approval of the plan of the International Bus Corporation. Final approval of the franchise, however, has been delayed for a short time so negotiations can be carried on between the City Council and representatives of the company over certain terms and conditions. If the franchise is granted, there will probably be no delay in getting the necessary approval from the Public Service Commission.

The new bus routes would operate in Richmond Avenue, replacing the Hoyt Street one-man car line and a crosstown line covering Best-North Streets, replacing the Best Street car line. The present bus route in Bailey Avenue would be lengthened. Double-deck buses would be operated over Richmond Avenue with single-deck buses on the Best-North Street route. The company's plans have the approval of the Buffalo Chamber of Commerce and the Buffalo Business Federation.

Transportation Agencies Unified in Tulsa

An important step toward unification of transportation facilities in Tulsa is involved in the purchase by the Oklahoma Union Railway of the buses and equipment of the Brasier Transportation Company and the People's Transportation Company. The consideration was not divulged, but the value of the equipment is about $250,000.

Duplication of service, which has existed for months under the competitive system, will be eliminated and the extra buses will be placed on routes in sections of the city which have not heretofore had adequate bus or street railway service. Transfers will also be issued from one bus line to another and from the buses to street car lines so as to enable riders to purchase a continuous ride across the city for a single fare. The proposed unification and rerouting plans were approved by the City Commission on March 23.

Bus Bills Progress in New York

The Senate of New York on March 29 passed and sent to the Assembly the two Thayer bills amending the public service commission law in relation to bus lines.

One of these bills amends subdivision 9, Section 2, by including as common carriers persons or corporations publicly transporting persons or property in motor vehicles between fixed terminals or over a regular route. The second bill adds new Article 3-a to the public service commission law, bringing under the supervision of the Public Service Commission stage, omnibus or motor vehicles operating between fixed terminals or over a regular route as common carriers.

Increased Service Sought.—Extension of bus service in the northwest, southwest and southeast sections of the city of Miami, Fla., was asked recently of the Miami Beach Railway, operating the city buses, by H. H. Arnold, traffic director. Mr. Arnold has completed a survey of the territories affected and said that the new routings would be a great convenience to thousands of residents in the outlying communities.

Protects Existing Agencies.—Mayor Nichols of Boston has vetoed the order of the Boston, Mass., City Council authorizing Franklin L. Hart of Dorchester to establish a bus line between Boston and Keene, N. H. The Mayor takes the same view that Mayor Curley held, that the regular transportation agencies, the railroads and street railways should be protected against competition which would cripple them and cause impairment of service.

Would Run Buses in Conjunction with Cars.—The Dover, Somersworth & Rochester Street Railway, Dover, N. H., has petitioned the Public Service Commission of New Hampshire for authority to use buses in co-ordination with its railway lines. It also asks for permission to discontinue trolley service on any or all parts of its system as is found advisable and substitute bus service entirely if necessary. Present plans of the railway are to operate buses over the Dover, Somersworth, Rochester and East Rochester route and over the Somersworth-Rochester route, via the East Side state highway and Rochester Hill. The matter is up for a hearing at Concord, N. H., on April 27.

Bus Line Restrained.—Circuit Judge George A. Crow of Belleville, Ill., has issued an injunction restraining the Community Motor Bus Company of Belleville, Ill., from operating two bus lines until it obtains certificates of convenience from the Illinois Commerce Commission. The injunction was sought by the East St. Louis & Suburban Railway and its bus line subsidiary, the Red Line Motor Bus Company. The Community company is restrained from operating buses between Collinsville and Troy, Ill. This line competes with the Red Line's buses. The other route affected is between East St. Louis and Collinsville, Ill., in competition with the East St. Louis & Suburban Railway.

Financial and Corporate

British Columbia Issue Sold Quickly

Customer-Ownership Campaign Successful—$7,125,300 in Shares Subscribed in Less than Six Days

More than 11,500 applications for $7,125,300 in shares in a period of five and a half days is the record of a customer-ownership campaign just concluded by the British Columbia Electric Railway, Vancouver and Victoria, B. C.

Employees of the company to the number of 1,410 bought shares to the value of $602,000 and brought in 9,441 customer applications for a total of $5,023,300. Local brokers reported applications which are expected to bring the number of shareholders above 11,500 for $1,500,000 more.

The offer made to the public was $2,250,000 of 6 per cent cumulative preference shares of the British Columbia Electric Power & Gas Company, a Canadian company, dividends being guaranteed by the British Columbia Electric Railway, the parent company. Of the amount offered $1,500,000 was underwritten by a syndicate of bond dealers and the remaining $750,000 allotted to employees to buy themselves and sell to the public. The price was 99.

Applications were limited to 50 shares and no applications would be accepted from non-residents of the province of British Columbia. The population of the territory served is 350,000.

It was originally intended to open the sale on March 20, but owing to public demand, arising through the spread of news of the offer, the company was forced to allow brokers and employees to take applications on March 15. It was impossible to push the advertising campaign ahead more than two days or to March 17, but in spite of that brokers sold out their amount in two days and employees their allotment in 24 hours.

On the third day of the sale, when the advertising began to be effective, sales totaled $1,200,000. The closing date had been named in the prospectus as March 31, and when oversubscription was seen to be inevitable this date was pushed ahead to March 20. Applications continued to come in at a rapid rate, although employees were requested to make no new efforts.

COMMENT VERY FAVORABLE

One department of the company in Vancouver, the accounting department, with 187 employees, sold nearly the entire original allotment of $750,000. Employees of the Vancouver railway department to the number of 300 took shares of a total value of $132,700 and this department made no less than 959 sales of a total of $458,000. The city of Victoria with a population of 50,000 bought $1,000,000, par value, of shares.

Newspaper comment declared that the oversubscription indicated the public's confidence in the company and demonstrated public opinion of its integrity. No such public subscriptions had been seen since the days of Victory loans during the war. It is noteworthy that more than 3,000 applications were received for single shares. The shares will be allotted in a slightly increasing scale so as to secure the widest possible distribution. It was intended to offer the remaining $2,750,000 of this issue next autumn, but the entire amount will now be placed.

All financing by the company has hitherto been done in England. George Kidd, president of the company, Vancouver, received congratulations from all quarters on what is believed to be a record accomplishment.

Net Deficit of $107,090 in Toledo

Revenue losses in Toledo due to private automobiles and bus competition resulted in a net deficit of $107,090 to the stabilizing fund of the Community Traction Company for the year ended Dec. 31, 1925. The previous year operation resulted in a net deficit of $209,786. These facts were disclosed in the annual report of the commissioner submitted recently to the City Council at Toledo. Offsetting the 1925 deficit, however, is the credit of $284,149 set aside from revenues for the sinking fund requirements through which car riders are purchasing the properties for the city.

Total operating revenues for the year were $3,610,934, compared with $3,779,289 in 1924. Operating expenses were reduced from $3,029,990 in 1924 to $2,742,484 in 1925. Revenue passengers carried in 1925 totaled 48,377,487, compared with 53,161,617 in 1924. It was brought out in the report that the loss of patronage occurred in the months prior to September when fares were lower and more service was operated than the previous year.

Maintenance, repair and depreciation allowances taken directly from revenues amounted to $816,231. In addition the first railway extension in many years was made in Sylvania Avenue when more than a mile of track was added to the Cherry Line.

Claims and damages, including cost of administration, were cut to $135,346. Automobile accidents showed an increase, indicating that the main thoroughfare ordinance was less effectual than in the preceding year.

Twenty of the 500 type cars were rebuilt and equipped for one-man operation. New motors and trucks were installed along with safety equipment and other improvements. Twelve others not requiring rebuilding were equipped for one-man operation.

Through the sinking fund a total of $984,000 of bonds was retired and the cash balance of the fund was $194,152 at the end of the year.

Acting Commissioner E. L. Graumlich suggests that action which will insure a continuance of the transportation system on a stable basis is imperative.

He cites the fact that the sinking fund weighs heavily upon the revenues and makes fixed charges mount to a point where operation cannot be made to pay. He recommends that restrictions against use of modern equipment be taken away so that transportation may be provided as an aid to development of the whole city. He also suggests protection from competition.

Gross and Net of Market Street Railway, San Francisco, Up

Gross revenue of the Market Street Railway, San Francisco, Cal., showed a gain of $50,539 in 1925 and the balance after operating expenses and taxes was $2,227,959, an increase of 1.4 per cent over 1924. Bond interest and amortization of discount on funded debt was $937,991, an increase of $37,827, or 4.2 per cent, over 1924.

"Income Charges—Other" as it appears in the income account includes the interest on a judgment which the Pacific Gas & Electric Company ob-

INCOME AND EXPENSE ACCOUNT OF THE COMMUNITY TRACTION COMPANY FOR THE YEAR ENDED DEC. 31

			Cents per Car-Mile	
Revenue:	1925	1924	1925	1924
Passenger	$3,433,896	$3,515,692	51.045	49.456
Miscellaneous transportation	1,633	954	.024	.014
Other operating revenues	175,404	262,642	2.608	3.695
Total operating revenue	$3,610,934	$3,779,289	53.677	53.165
Operating expense:				
Maintenance	$681,106	$770,125	10.125	10.834
Depreciation	138,091	136,586	2.053	1.921
Transportation	1,157,719	1,285,716	17.210	18.087
Power	386,838	421,595	5.750	5.931
Traffic	13,917	1,983	.207	.028
General and miscellaneous	354,304	393,086	5.266	5.530
Street Railway Commissioner	10,507	20,896	.156	.294
Total operating expense	$2,742,484	$3,029,990	40.767	42.625
Net operating revenue	868,449	749,298	12.910	10.540
Taxes	190,331	183,450	2.829	2.580
Net operating income	$678,118	$565,847	10.081	7.960
Non-operating income	22,001	18,543	.327	.261
Gross income	$700,119	$584,391	10.408	8.221
Interest bonds and notes	436,498	443,088	6.489	6.233
Surplus	$263,620	$141,302	3.919	1.988
Preferred dividends	86,562	84,845	1.287	1.194
	$177,058	$56,457	2.632	.794
Sinking fund	284,149	266,244	4.223	3.745
Stabilizing fund	*$107,090	*$209,786	*1.591	*2.951

* Indicates deficit.

tained against the Market Street Railway growing out of additional charges for electrical energy furnished the Market Street Railway, made pursuant to an order of the Railroad Commission. From this order the company appealed to the courts and an appeal from a judgment in the lower court is before the Supreme Court of California.

President Starring says that the reduction of the funded debt in the hands of the public from $13,000,000 on April 1, 1924, to $12,239,000 at Dec. 31, 1925, is worthy of note. He points out that the sinking fund payment of a total of $500,000 per annum, although decreasing the company's available cash, does not decrease its earnings, inasmuch as it correspondingly decreases the funded debt of the company.

Mr. Starring explains that for several years past negotiations have been pending with the city of San Francisco concerning the city's purchasing the railway operative property. In 1925, pursuant to an initiative petition, the question of the city's purchase of the property was submitted to the voters and overwhelmingly defeated.

More than 350 cars were overhauled in the general shops and put in first class condition. Also 24 new cars were built and put into service. A maximum of 673 cars in daily operation was reached in December. In September the company commenced the operation of its first bus. Jitney competition is considerably reduced, but competition of the Municipal Railway is energetic.

Much work was done to the other physical property of the company to keep it to a high standard.

STATEMENT OF INCOME AND PROFIT AND LOSS OF MARKET STREET RAILWAY FOR THE YEAR ENDED DEC. 31, 1925

Operating Revenue:		
Passenger	$9,830,196	
Other	72,572	
Total		$9,902,768
Operating Expenses and Taxes:		
Maintenance of way and structures	648,646	
Maintenance of equipment	648,008	
Power (including disputed charges)	1,331,060	
Transportation and traffic	3,607,856	
Miscellaneous	822,235	
Total	7,057,808	
Taxes (other than Federal income taxes)	617,000	
Total operating expenses and taxes		7,674,808
Net operating revenue		2,227,959
Other Income Credits:		
Interest	34,539	
Other	16,523	
Total		51,062
Gross income		2,279,022
Income Charges:		
Interest on funded debt	882,509	
Discount on funded debt	55,482	
Provision for 1925 federal income tax	106,924	
Depreciation of railroads and properties	500,000	
Other	41,970	
Total		1,586,886
Net income for the year		692,136
Surplus at beginning of year		2,060,069
Profit and loss credits		2,545
Gross surplus		2,754,751
Profit and loss charges—net adjustment of discount on funded debt		29,180
Surplus, Dec. 31, 1925, per balance sheet		$2,725,570

How a Financial Authority Sees It

The toppling of prices of stocks the present month does not indicate the beginning of a period of "depression" in business, but it must be said that it is not a salutary thing for the country. For months, with only a few reverses, quotations of stocks had been continuously rising. Prices in many cases had come to bear no relation to intrinsic values and current earnings. Factors, such as "mergers" and splitting of shares, and combines, have shown very large paper values. And upon a continuation of these factors prices have been enhanced by trading on the exchanges. Their worth was not allowed to prove itself, but was discounted in advance.

As a consequence, under the influence of easy money and the liberal use of Reserve credit, the whole market became speculative. Now, when through some unforeseen element prices fall suddenly, it must be true that tens of thousands of "outsiders" are caught in the slump and lose their all. For this desire to speculate seems to be innate in human nature. Most persons like to "make money" fast, and seeing others "make," albeit the profits are on paper, are induced to buy at the then "top." And these losses bode no good to business, though they do not necessarily mean "depression."

This much is certain in any event, namely, that as a result of the gigantic stock speculation of the last two or three years a vast deal of financial energy has been absorbed in non-productive uses. And it follows that a redundant money supply has been a sustaining element to the detriment of legitimate business. In this view the consequences of a "smash," provided producing business is not disastrously affected, may augur good to the country at large. And this effect, if indeed it eventuate, will be widespread. — *Commercial and Financial Chronicle.*

Arrangements Made to Pay Back Dividends of Republic Railway

Plans have been declared operative under which the accrued dividends on the preferred stock of the Republic Railway & Light Company, New York, amounting to $34.50 will be paid and the exchange of Republic preferred stock will be made for an equal amount of 6 per cent cumulative preferred stock of the Penn-Ohio Securities Corporation. The cash payment is equivalent to the dividends accrued and unpaid on Republic preferred to Jan. 15,1926, and the new preferred of Penn-Ohio Securities is cumulative from that date. A substantial majority of the stock has already been deposited and the new stock and cash will be ready for delivery April 5. The exchange offer, however, will not expire until April 10.

Protective Committee for Chicago Railways

A bondholders' protective committee has been formed for $62,785,000 of Chicago Railways first mortgage bonds which mature on Feb. 1, 1927, the date on which franchise expires. The committee is headed by Albert W. Harris, chairman of board of the Harris Trust & Savings Bank. The statement issued by the committee says:

Notwithstanding the favorable relation between the amount of first mortgage bonds and the acknowledged value of property and favorable relation of annual interest charge to company's earnings available for payment of such interest, the present credit position of the company is such that an ordinary refunding operation appears to be impossible.

Maryland Interurban Reports Surplus in 1925

The Washington, Baltimore & Annapolis Electric Railroad, Baltimore, Md., reports a deficit in net income in 1925, but on account of profit and loss credits it finished the year with a surplus of $245,243. During the year 4,021,766 revenue passengers were carried, against 4,429,387 in 1924. Car-miles operated totaled 4,582,032. One per cent of the gross operating revenue of the company was credited to "Reserve for Injuries and Damages." The balance in the reserve account as of Dec. 31, 1925, was $125,025. The disbursements in payment of accident claims, suits, judgments and other expenses of the department amounted to 1.32 per cent of the gross operating revenues.

SUMMARY OF INCOME AND PROFIT AND LOSS OF WASHINGTON, BALTIMORE & ANNAPOLIS ELECTRIC RAILROAD FOR YEAR ENDED DEC. 31, 1925

Operating revenue		$2,694,910
Operating expenses prior to provision for depreciation		1,994,723
Net operating revenue prior to provision for depreciation		$700,187
Taxes assignable to railway and other operations		128,867
Operating income prior to provision for depreciation		$571,319
Non-operating income (net)		27,516
Gross income for the year applicable to interest on funded debt		$598,836
Deductions from gross income:		
Interest on funded debt	$518,804	
Amortization of discount on funded debt	47,077	
Provision for depreciation	46,488	
		612,370
Net income for the year		*$13,533
Profit and loss net credits during the year		258,776
Profit and loss gross surplus for the year		$245,242
Dividends paid		None
Profit and loss surplus for the year		$245,242
Profit and loss surplus at beginning of the year		527,837
Profit and loss surplus at close of the year		$773,080

*Deficit.

Bus Plans for Twin City Reviewed in Annual Report

The total railway operating revenue of the Twin City Rapid Transit Company and subsidiary companies of St. Paul and Minneapolis, Minn., for the year ended Dec. 31, 1925, was $12,378,352, a decrease of $326,217 compared with the previous year. Total operating expenses were $9,234,089, an increase of $48,161. These facts were included in the annual statement of Horace Lowry, president of the company, to the stockholders.

The report gives in detail the history of the valuation and fare problems affecting the properties of the Minneapolis Street Railway and the St. Paul City Railway. The various steps in this controversy have been reviewed in the ELECTRIC RAILWAY JOURNAL from time to time.

On the subject of bus competition the report states that in order to protect the railway property it was necessary to take steps to provide for the demands for bus service, properly coordinated with railway service. In order to bring this about the purchase of the Twin City Motor Bus Company was effected, and negotiations were pending for the purchase of the third and last competing bus line in the Twin Cities. Mr. Lowry stated that the management believed it would be to the best interests of the company and the public to have bus service as well as street railway service controlled by one transportation company. No serious difficulty is expected in working out this problem with the cities so that a co-ordinated street railway and bus service would be provided which would not operate to the disadvantage of the company's railway service, "so desirable and essential to the public."

During the year earnings were sufficient to pay regular quarterly dividends at the rate of 7 per cent per annum on its preferred stock and to permit two semi-annual dividends of 2 per cent each to be paid on the common stock.

Discontinuance of Onset Street Railway Suggested

Financial difficulties have overtaken the New Bedford & Onset Street Railway, New Bedford, Mass. The stockholders have voted to inform the holders of bonds which mature next January that "the company is not in position to pay the same and is unable to offer a refunding plan which appears practicable. The directors of the road, therefore, suggest to the bondholders the appointment of a committee to consider what action they may deem best to take in the premises." President Crapo says:

> The confidence of the promoters of the New Bedford & Onset Street Railway has at no time been justified. Until of late, however, it has been able to earn barely a net sufficient for a small amount of depreciation and to pay the interest on its $280,000 of mortgage bonds which were once extended and will come due Jan. 1, 1927.
>
> It would seem that all possible economies of operation have been exhausted and that there is no prospect of a chance for the better. Such being the case and in view of the approaching maturity of the bonds it seems proper to stockholders to take such action as will enable the bondholders to determine whether the railway shall continue to be operated or liquidated.
>
> The explanation of the situation is simply the development of the use of automobiles. The transportation service rendered for 25 years to the communities in which the railway operates without return to the owners has been of a large benefit to the communities. In matters of its continuance these communities manifestly have an interest. What action they may see fit to take is for them to determine.

CONSOLIDATED INCOME STATEMENT OF THE TWIN CITY RAPID TRANSIT COMPANY

	1925	1924
Revenue from transportation	$12,269,156	$12,593,798
Revenue from other railway operation	109,196	110,770
Total railway operating revenue	$12,378,352	$12,704,569
Way and structures	$1,215,796	$1,175,455
Equipment	1,129,065	1,039,108
Power	1,270,698	1,336,670
Conducting transportation	4,391,692	4,308,179
Traffic	36,233	46,479
General and miscellaneous	1,248,919	1,351,255
Transportation for investment—credit	—58,317	—71,222
Total railway operating expenses	$9,234,088	$9,185,927
Net operating revenue	$3,144,263	$3,518,641
Taxes assignable to railway operation	1,291,137	1,265,982
Operating income	$1,853,125	$2,252,659
Income from unfunded securities and accounts	$73,045	$53,312
Miscellaneous income	49,666	37,394
Net income miscellaneous physical property	61,918	10,355
Total non-operating income	$184,631	$101,061
Gross income	$2,037,757	$2,353,721
Rent for leased roads	$3,000	$3,000
Interest on funded debt	988,954	1,072,968
Miscellaneous debits	8,375	8,744
Total deductions from gross income	$1,000,329	$1,084,712
Net income transferred to profit and loss	$1,037,427	$1,269,008

PROFIT AND LOSS ACCOUNT OF THE TWIN CITY RAPID TRANSIT COMPANY

Balance Jan. 1, 1925		$1,876,038
Additions for the year		1,037,427
Net adjustments	$29,332	
Dividends on preferred stock	210,000	
Dividends on common stock	880,000	
Balance carried forward	1,794,133	
	$2,913,465	$2,913,465

STATISTICAL STATEMENT OF THE TWIN CITY RAPID TRANSIT COMPANY

	1925	1924
Total revenue	$12,562,983	$12,805,631
Total operating expenses	$9,234,088	$9,185,927
Net revenue	$3,328,895	$3,619,703
Revenue passengers carried	200,783,106	209,202,818
Transfers redeemed	72,814,559	74,698,853
Operating, per cent of revenue, taxes included	83.78	81.62

TRACK MILEAGE AND PASSENGER REVENUE PER MILE OF TWIN CITY RAPID TRANSIT COMPANY

Total miles, first track	266.11
Total miles, second track	200.18
Total miles, carhouse and storage track	32.83
Total miles, all track	499.12
Average total miles, track operated during 1925	495.49
Total miles street and right-of-way occupied by tracks	257.49
Average total miles street and right-of-way occupied by tracks operated during 1925	255.61
Gross passenger car revenue per mile, single track operated	$24,674.96
Gross passenger car revenue per mile, street occupied by tracks, operated	$47,831.46
Gross passenger car revenue	$12,226,198.34

Protest on Valuation on April 9.—Following a conference in which members of the Maryland Public Service Commission, counsel for the United Railways & Electric Company, Baltimore, and Clarence W. Miles, people's counsel, took part, the commission has set April 9 as the date to hear a protest filed by the United. The company protests the valuation of $77,000,000 placed upon its property by the commission. The protest declares that the valuation is too low. The people's counsel recently filed a petition in court in which it is asked that the $7,000,000 included for easements in the commission's valuation be stricken out.

Committee Formed to Protect Bondholders—A committee has been appointed to look after the interests of the first mortgage bond holders of the Grand Rapids, Grand Haven & Muskegon Railway, Grand Rapids, Mich. The interest due on Jan. 1, 1926, on the $1,500,000 of first mortgage 5 per cent 25-year gold bonds, is in default.

Net Income Slightly Lower.—For the eight months period ended Feb. 28, 1926, the passenger revenue of the Brooklyn City Railroad, Brooklyn, N. Y., was $7,486,575, against $7,485,501 for a similar period of last year. Operating expenses and taxes fell from $6,494,789 for the eight months period ended Feb. 28, 1925, to $6,394,466 for a similar period ended this year. After the consideration of income deductions the eight months period ended Feb. 28 of this year resulted in a net corporate income of $930,680, against $936,832 for a similar period of the year previous.

Partial Discontinuance Allowed.—The Washington Railway & Electric Railway of Washington, D. C., has been authorized by the Public Utilities Commission to discontinue permanently railway service on Macomb Street and Massachuetts Avenue from Wisconsin to Western Avenue and to remove rails.

Tax Abatement Request Tabled.—In preparation for the proposed sale of the Hartford & Springfield Street Railway, Warehouse Point, Conn., under decree of foreclosure and in line with anticipated plans for reorganization of the company, Harrison B. Freeman, receiver, has applied to Board of Control, Hartford, Conn., for abatement of back taxes amounting to $62,336. The company owes $73,250 in taxes from 1917 to 1925. In that time it paid the state $29,418 taxes and plans to pay the 1917 taxes, amounting to $10,913. The request was tabled by the board.

Bus Operation Increases Revenues.—For the second time since Jan. 1, 1925, the Madison Railways, Madison, Wis., in February has showed an excess in gross passenger revenues compared with the average four-year period during the corresponding month. During February, this year, the street cars and buses carried 589,362 passengers, against 553,091 during a similar month a year ago, at which time, however, the company was not operating buses. Gross revenues jumped from $36,462 in February, 1925, to $39,337 in February, 1926. Revenues from railway service alone in February, 1925, was $36,462, compared with $35,531 in February of this year.

Legal Notes

CONNECTICUT — *Railway Not Liable After Alighting Passenger at an Irregular Stop Is Struck by Passing Automobile.*

In this case a one-man car stopped about 15 ft. short of a painted pole which designated a regular stopping point, and a passenger who alighted was struck and injured by a passing automobile. The court held that the company was under no duty to have its car stop at the white marked pole. It might stop its car at any convenient place in the vicinity, provided that access to the sidewalk was afforded upon a highway which was not defective or dangerous. Finally, the motorman was under no duty to warn alighting passengers of danger from approaching automobiles. Such a danger is as well known to a passenger as to a motorman or conductor, and the danger can be avoided only by the passenger himself. He is also in a better position to observe automobiles coming from behind than a motorman on the forward end of a car. [St. John vs. Connecticut Co. et al., 131 Atlantic Rep., 396.]

MARYLAND. — *Contributory negligence of child running into street cars.*

As a matter of law, a four year old child cannot be considered guilty of contributory negligence merely because he collided with the side of a car, which was traveling at a high rate of speed. [State vs. Washington B. & A. Electric Railway, 131 Atlantic Rep., 822.]

MASSACHUSETTS—*Sudden Starting of Car with All Passengers Inside Ordinarily Not Negligent.*

A female passenger on a one-man car signaled by a push button that she wished the car to stop, but as she approached the exit, another passenger got off. The operator without looking around then closed the door and started the car "with an awful jerk," throwing the passenger to the floor. The court held that the sudden starting and stopping of a car, when passengers are fairly within it, even if they are not seated, is not negligence, and the company was held not liable for this accident. [Gollis vs. Eastern Mass. St. Ry., 149 Northeast. Rep., 607.]

NEW YORK—*Conditions of Sale of Bus Franchises.*

Cities the size of Yonkers are authorized to establish bus routes and provide for their sale at public auction. The successful bidder must then secure from the Public Service Commission a certificate of convenience and necessity before beginning operation. The city of Yonkers established 13 bus routes and provided for their sale in a group, but the plaintiff, a tax payer, brought suit to restrain the sale on the ground it would result in a waste of city property. It said it would bid for some of the franchises if sold separately, but could not do so if all were sold together. The Supreme Court held that such a grouping imposed an unnecessary burden on cities, suppressed competition and limited the amount that would be given for a profitable franchise. Such a sale could therefore be enjoined by a tax payer. A provision in the city ordinance providing for the sale, reserved to the city the right to require extensions or additions of the same kind from the purchaser of the franchise. The court held that if this meant a grant to the purchaser of a future franchise, it was contrary to the statute requiring the sale of franchises at auction. [Yonkers Ry. vs. City of Yonkers et al., 212 New York Supp., 339.]

NEW YORK—*Injury to Descending Passenger Stepping on Partly Unfolded Step.*

A trolley car was standing still and the door, which operated in conjunction with a folding step, was sufficiently open for a passenger to pass through when leaving the car. As such a passenger placed her foot on the step to alight, it unfolded and threw her to the ground. The company was held liable. [Micklin vs. Union Railway, 212 N. Y. Sup. 291.]

OHIO—*Interstate Bus Carriers Subject to Utilities Commission, Except Where Its Rules Involve Direct Burden on Interstate Commerce. Such Burden Not Involved by Forbidding Carrier to Conduct Intrastate Business.*

An interstate bus company received and accepted a certificate of convenience and necessity with the qualification that it could not conduct intrastate business because an existing intrastate bus company served the same route within the state. The older company opposed the grant of the certificate, which was upheld by the Supreme Court, which held the certificate imposed on the interstate bus company "the usual regulations imposed on all companies engaged in intrastate commerce within the state" while the denial of a right to receive intrastate passengers protected the existing company. It also held that this condition was not an unreasonable burden upon interstate commerce. [Cannon Ball Transportation Co. vs. Public Utilities Commission of Ohio, 149 Northeast. Rep., 713.]

TENNESSEE—*Law Prohibiting Operation of One-Man Cars in Cities of More than 30,000 Population Too Indefinite.*

The Tennessee Legislature of 1925 passed an act prohibiting the operation of one-man cars except in cities of less than 30,000 population. The act was held invalid because it did not declare whether the population was to be determined by the federal census of 1920 or some other census and whether the prohibition went into effect when a city attained the population mentioned. [Knoxville P. & L. Co. vs. Thompson et al., 276 Southeast. Rep., 1050.]

WASHINGTON—*Statute Requires Commission to Grant Certificate to Existing Transportation Company in Preference to Development Company Financing Part of Highway Used.*

A development company, prompted by public spirit, assisted financially in the construction of a highway through a national forest reservation and then applied for a certificate of convenience and necessity for the operation of buses not only over this extension but beyond to the town of Bellingham. An existing bus line had given good service for a number of years from Bellingham to the beginning of the extension to the highway and its application for a certificate to give through service from Bellingham to the further end of the extended highway was granted by the commission in preference to the development company. This action was upheld by the Supreme Court of Washington. [Yelton & McLaughlin vs. Department of Public Works et al., 240 Pacific Rep., 679.]

WISCONSIN—*Railroads Will Not Be Debarred Because They Interfere with Zoning and County Planning.*

The Railroad Commission is not authorized to refuse a certificate of convenience and necessity for the proposed extension of an electric railway required for the convenience and necessity of the general public because of the inconvenience to individuals along the proposed right of way or because of detriment to municipal zoning plans. In consequence, evidence of such zoning plans and county planning need not be considered by those empowered to issue certificates of convenience and necessity, because such evidence is immaterial to a decision in the case. [Milwaukee E. R. & L. Co. vs. Milwaukee County, 206 Northwest. Rep. 201.]

WISCONSIN — *Control of Commission over Terms for Leased Property*

A power company owned a dam and transmission line, and at no time had furnished light, heat or power to any one, but had simply leased its property and equipment to a public utility company for that purpose. Such a power company was held not to be a "public utility" under the meaning of that term in the Railroad Commission statute. Hence the commission was without jurisdiction to regulate or control the terms of the lease of its property to a public utility company, and its jurisdiction was confined to the rates charged to the public by the public utility company, but if it found the rental paid by the latter to the power company was unreasonable, it could allow only such charges as it thought reasonable. In fixing such rates, the commission can take into consideration the amount for which the utility might obtain similar service from other sources. The court said that the public is primarily and solely interested in a reasonable rate, which it is the duty of the commission to fix. A rate may be reasonable although it may permit the utility to earn a return beyond the legal rate of interest on the money invested. [Chippewa Power Co. vs. Railroad Commission et al., 205 Northwest. Rep., 900.]

Personal Items

Changes in Philadelphia Personnel

W. K. Myers Succeeds W. C. Dunbar—R. F. Tyson, Operating Vice-President, Made Member of Board

Changes made in the personnel of the Philadelphia Rapid Transit Company, Philadelphia, Pa., at the annual meeting of the company on March 17 were referred to briefly in the ELECTRIC RAILWAY JOURNAL for March 20. The board accepted the resignation of W. C. Dunbar and elected as president W. K. Myers, who has been acting president during Mr. Dunbar's absence in Detroit. Mr. Dunbar is temporarily released by the Mitten organization at the request of P. R. T. bankers to aid them in the financial rehabilitation of their Detroit interests.

Mr. Dunbar's letter of resignation, addressed to T. E. Mitten, chairman of the board, follows:

Dillon, Read & Company are desirous that I should continue to act as receiver for the Detroit United Railway, this in order that I may further assist in formulating a plan of reorganization for that company. It is my belief that we should help our bankers in this particular, and I am personally most anxious to complete the work on which I have already spent several months.

Agreeable to our conversation of this morning, I therefore submit my resignation as president of P. R. T., effective March 17, which is the date of the annual meeting and consequently the date of the election of a new president.

P. R. T. has now passed through its most serious financial phases, so that my particular talents in this direction can be spared. Vice-President Myers will, I believe, permanently fill the duties of this position to your satisfaction. Meantime the experience gained in my added work at Detroit will, I am sure, be of great benefit to our organization.

T. E. Mitten was re-elected chairman of the board and C. J. Joyce vice-chairman. Mr. Mitten, Mr. Joyce and Mr. Myers were named members of the executive committee, Mr. Myers replacing Mr. Dunbar in this capacity.

At the annual meeting of P. R. T. stockholders C. B. Hauseman, electrician in the way department and president of the employees' co-operative association, was elected a member of the board of directors, succeeding F. F. Slook, the retiring president of the association.

R. T. Senter, who has been made a director and vice-president of Mitten Management, Inc., will leave the P. R. T. board to make way for S. H. Stout, electrical switchboard operator and recently elected vice-president of the co-operative association. With two representatives on the board, P. R. T. employees will thus have a continuing representation, since the vice-president of the association succeeding the president makes this office, with this directorship, an effective training for the presidency of the association.

R. F. Tyson, operating vice-president, was also made a member of the board.

T. E. Mitten, C. J. Joyce, A. A. Mitten, W. K. Myers and Leon Jewell were re-elected members of the board.

The career of Mr. Myers has been reviewed before at length in the ELECTRIC RAILWAY JOURNAL. He went with the Philadelphia Rapid Transit Company in 1919 as valuation manager and member of the valuation committee, was made vice-president in charge of accounting and finance in 1923 and since Aug. 25, 1925, has been acting president in the absence of W. C. Dunbar. Mr. Myers was born on Dec. 17, 1883, in Millville, N. J. He was educated in the public schools of Lancaster, Pa., and was graduated from Pennsylvania State College in the class of 1905 with the degree of B. S. From 1908 until 1919 he was on the staff of the board of supervising engineers, Chicago Traction, where he was engaged in general engineering work in connection with the rehabilitation of the surface electric railway lines in the city of Chicago.

W. K. Myers

Mr. Hauseman is the youngest man to hold the office of Co-operative Association president. He was born in Baltimore in 1895. He went to work for P. R. T. at the age of fourteen, serving as an apprentice in the way department. After three years, he left the company to work at his trade for two years. In 1917 he returned. His total service with P. R. T. has been eight years. Mr. Hauseman attended the Philadelphia grammar schools and the Philadelphia Trade School, in which he took the electrical course.

Mr. Stout was born in Burlington, N. J., in 1878. In 1904 he joined P. R. T. in the electrical department, where he has been up to the present time. Since 1918 Mr. Stout has been active in men and management relations, having been an employee committeeman since that time, with the exception of one year when he was defeated for re-election by one vote. He was chairman of the employees' general committee for five years and several times chairman of his departmental committee. Mr. Stout attended the public schools in Burlington, N. J., took a course in business administration at the Trenton Business College and attended Temple University for two years.

D. K. Lewis in Executive Post at Twin Cities

D. K. Lewis, chief electrical engineer and operating superintendent of the Mexico Light & Power Company and the Mexican Tramway, Mexico City, for three years, has been appointed assistant to T. Julian McGill, vice-president of the Twin City Rapid Transit Company, Minneapolis, Minn. He succeeds W. W. Whiteford, who resigned on Jan. 1, to go into the bus sales business.

Mr. Lewis is an electrical and mechanical engineer. He was graduated from Clemson College, S. C. He went into the testing department of the General Electric Company at Schenectady, N. Y., in June, 1903. Later, for twelve years, he was a foreman of construction for the company at Chicago. From April, 1917, to December, 1918, he was in the army.

In 1920 Mr. Lewis was appointed electrical engineer for the Fort Dodge, Des Moines & Southern Railroad at Boone, Iowa. From November, 1921, to July, 1922, he was electrical engineer for the Winnipeg Electric Railway. Then he became manager of the Camaguey Electric Company and the Camaguey Tramway, Camaguey, Cuba. In March, 1923, he went to Mexico for the English owners of the properties there.

Personnel Changes in New Bedford

Henry H. Crapo has resigned as president of the Union Street Railway, New Bedford, Mass., after 32 years of executive control.

Elton S. Wilde was advanced from vice-president and general manager to the position of president.

Edward F. Nicholson was made vice-president in addition to the position of treasurer, which he already holds.

Ernest Baines was elected to the position of assistant treasurer.

F. R. Cornell New Superintendent of Laurel Line

F. R. Cornell is the new superintendent of the transportation department of the Lackawanna & Wyoming Valley Railroad (Laurel Line) of Scranton, Pa., according to an announcement of P. J. Murphy, vice-president and general manager. In this position he succeeds J. H. Kilker, who was in charge of the transportation work for a number of years, but who resigned recently to engage in other business.

The new superintendent is a railroad man of broad experience. He has been in the employ of the Delaware, Lackawanna & Western Railroad continuously since 1903. All told, he has been with the Lackawanna railroad for 23 years. For a number of years he was a trainman and then a conductor with that company.

Since the resignation of Mr. Kilker several weeks ago the affairs of the transportation department have been well and capably administered by J. H.

Murray, former superintendent of that department and employed by the Laurel Line practically since it was placed in operation.

F. J. Boehm Secretary and Treasurer at Milwaukee

Frank J. Boehm, assistant secretary and assistant treasurer of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., since 1906, has been promoted to secretary and treasurer. Mr. Boehm has been associated with the Milwaukee company for 40 years. He started with the company as an office boy in 1882, was promoted successively to clerk, bookkeeper, accountant and auditor.

E. C. Parham Promoted in Brooklyn Repair Shops

E. C. Parham has succeeded the late Frederick N. Parsons in the capacity of general foreman of the electrical repair shop of the Brooklyn-Manhattan Transit Corporation, Brooklyn, N. Y. He was advanced from the position of foreman.

Mr. Parham served an apprenticeship of three years at the works of the General Electric Company in Schenectady, N. Y., beginning in 1890. Following this activity he joined the Steel Motor Company, Cleveland, a subsidiary of the Lorain Steel Company. Here it was that he made the acquaintance of the late Mr. Parsons, a contact which became closer a short time later in Brooklyn. Mr. Parham's early association in Brooklyn lasted only one year, for during the next five years he turned his attention to the writing of text books for the International Correspondence School.

However, he was destined to return to railway work and in 1903 he joined the Public Service Railway, Newark, N. J., in the capacity of electrical repair foreman at the Plank Road shops. Then he engaged in work on power house equipment for the Metropolitan Railway in New York and one year later again went with the General Electric Company.

Westinghouse Sales Officials Are Advanced

E. H. Sniffin has been appointed assistant to the vice-president and T. J. Pace has been made director of sales for the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., as a result of a complete reorganization of the sales department, announced on April 1 by E. D. Kilburn, vice-president and general sales manager. The managing personnel has been reallocated and several new departments created. Other appointments made were M. B. Lambert to be transportation sales manager; G. H. Froebel, central station manager; J. M. Curtin, industrial sales manager; A. C. Streamer, assistant director of sales; H. W. Smith, generating apparatus manager; A. J. Manson, traction apparatus manager; O. F. Stroman, motor apparatus manager; R. A. Neal, switch gear apparatus manager, and G. A. Sawin, distribution apparatus manager.

J. A. Frates Heads Oklahoma Body

Operating Vice-President of the Oklahoma Union Railway Honored by Election to Association Post

J. A. Frates, Tulsa, Okla., vice-president of the Oklahoma Union Railway, was elected president of the Oklahoma Utilities Association at the convention in Tulsa during the week ended March 20. Mr. Frates is a former steam railroad man. For several years he was general superintendent of the Frisco lines. Following this he was promoted and then constructed several short steam lines in Oklahoma to afford facilities to the oil fields.

Like many other electric railways, particularly the roads in cities of moderate size, the Oklahoma Union Railway was hard hit by the adverse economic conditions imposed during the war-time period and later suffered from the severe competition of jitneys,

J. A. Frates

permitted to run almost at random in the territory which it served. Mr. Frates was one of the officers of the company who helped to scotch this unfair competition by turning the bus to the railway's own advantage. Under his direction the road has greatly developed bus transportation in Tulsa and interurban transportation by bus in that section of the state immediately surrounding Tulsa.

Mr. Frates has also played an important part in the proceedings of the company to secure increases in fare adequate to permit it to function properly. This activity by him applies not only to the railway, but to the bus lines as well. For the bus lines he secured an increase in the cash fare from 7 to 10 cents with a token rate of three for 25 cents. Even before full authority with respect to its operation of buses had been granted to the company, Mr. Frates had fortified it in advance by having fifteen more buses in storage waiting the time when additional service and new lines could be operated. He has also played an important part in developing the public relations policy of the company.

William C. Naegel, for many years with the Kuhlman Car Company, Cleveland, Ohio, has joined the Lang Body Company, Cleveland, Ohio, in a sales and engineering capacity and for special development work. The Lang Body Company builds and develops bus bodies both in parlor cars and street car type of equipment. While with the Kuhlman company and its subsidiaries Mr. Naegel had charge of engineering, building designing bus bodies.

W. A. MacCorkle Heads Charleston Interurban

W. A. MacCorkle has been elected president of the Charleston Interurban Railroad, Charleston, W. Va. He succeeds in that capacity the late F. M. Staunton. Mr. MacCorkle was also made chairman of the board.

Arthur M. Hill, formerly treasurer, has been advanced to the position of vice-president and general manager. He will have charge of the company's transportation system, including the several bus lines being operated out of Charleston. Mr. Hill succeeded I. N. Smith, who has been general manager but who now will be secretary and treasurer.

The position of assistant secretary-treasurer was created at the meeting and J. W. Cummins has been chosen to fill it.

T. F. Woodlock Confirmed as I.C.C. Member

After a five-hour battle behind closed doors the Senate on March 26 confirmed Thomas F. Woodlock as a member of the Interstate Commerce Commission, ending a struggle of fourteen months.

A. E. Irwin, an employee of the Interstate Public Service Company, Indianapolis, Ind., in the auditing department for several years, has been appointed assistant treasurer.

Charles Oldenburg has resigned as claim agent for the Chicago & Interurban Traction Company, Chicago, Ill., after a service of 23 years with that company. He will enter the employ of the Public Service Company of Northern Illinois in the right-of-way department.

Alfred J. Bohl, general auditor of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., has been selected to succeed Frank J. Boehm as assistant secretary and assistant treasurer. Mr. Bohl's rise has been from the foot of the ladder. He entered the service of the company in 1901 as a messenger. Successive promotions in the accounting department took him to the position of general auditor a year ago. As noted elsewhere in this issue Mr. Boehm has been made secretary and treasurer of the company.

A. V. Brown has been replaced by E. P. Denman as maintenance of way engineer of the Lake Shore Electric Railway at Sandusky, Ohio. Mr. Brown and A. G. Voight, his assistant, were retired when a reorganization order became effective March 1. Mr. Denman had been identified for a number of years with the Cincinnati & Dayton Traction Company. He was in the Lake Shore Electric Railway construction department in Sandusky before going to Cincinnati sixteen years ago.

Manufactures and the Markets

News of and for Manufacturers—Market and Trade Conditions
A Department Open to Railways and Manufacturers
for Discussion of Manufacturing and Sales Matters

$700,000 Track Reconstruction Project in Cincinnati

Plans have been formulated by the Cincinnati Street Railway, Cincinnati, Ohio, to reconstruct car tracks upon nineteen important streets during this year at a total cost of $704,774, according to Walter A. Draper, president of the company. Mr. Draper said the company wished to have its improvement program coincide with the city's street resurfacing program for the year and stated that officials of the company were ready to discuss further the proposal made in a letter sent recently to the city administration. The cost of track reconstruction if the rails were laid just the same as at present would amount to $557,570, according to Mr. Draper, which amount would have to come out of funds for rehabilitation allowed the company by the Director of Street Railroads, under the present traction franchise. He characterized these funds as inadequate.

Cost of additions and betterments to present track construction caused by use of heavier rails and improved equipment would amount to $147,203, which, it was said, would be added to the capitalization of the company. Mr. Draper declared that the budget allowed the company only $419,678 for this work during the company year and that proposed track reconstruction, including the paving of the streets between the rails, would cost $137,892 more than the company would be allowed to spend. He suggested that this difference be made up by the city taking over the cost of repaving the streets between the tracks in several instances in order to allow the program to be carried out as fully as possible.

To Russia's Aid in Electrification

American electrification methods are generating to Russia, at least if negotiations to electrify Moscow's suburban steam railways and the construction of the Dneiper power plant become effective. The General Electric Company and Westinghouse Electric & Manufacturing Company of America have submitted specifications to Chairman Alexander Prigarin of the Amtorg Corporation, Soviet's Agency; these are estimated at $110,000,000.

Four delegates from the Soviet government, led by Joseph Tseshevsky, and including one woman engineer, Mme. T. Maretskaya, are expected to visit this country shortly to confer with officials here interested in the project. Because industry and agriculture have risen to almost the pre-war level, extension of electrified railways is essential to take care of the voluminous exchange in Russia.

The Dneiper River plant, which will derive its power from the rapids, will ultimately develop 600,000 hp., according to its engineers. It will be financially directed partly by the granting of operating concessions. The newest of these super-power systems now being organized in Russia is the one radiating from the Volkovstroy hydro-electric station near Leningrad. This system is to be completed by Swedish interests this spring with a maximum of 55,000 hp. Shatura station near Moscow, which operates on peat fuel, is generating 30,000 hp. Balachna station near Nijni-Novgorod, a peat-burning station also, is developing 20,000 hp. Shterovka station in the Donetz coal basin is expected to have 60,000 hp. eventually. All of these stations were built by German, Czechoslovakian and other European interests. Mr. Prigarin believes, however, that the Soviet government is anxious to introduce American methods and equipment into its power projects.

Too Many Laws About Bus Specifications

George Scragg Points Out Fallacy of "Over-Regulation" on Part of Individual States—Action Urged to Counteract this Tendency—Aid from Railways Needed

DECRYING the tendency on the part of various state legislatures to "over-law" bus operation, George H. Scragg, of the International Motor Company's bus department, made a graphic presentation of the economic features of state bus operation before the meeting of the National Automobile Chamber of Commerce motor truck committee meeting called in New York recently. Each state apparently feels called upon to extend its complete individuality through the medium of sometimes great and sometimes minute exactions in the matter of bus design, and the worst of it, according to Mr. Scragg, is that there is no real justification for these manifestations of superauthority on the part of the state government.

Massachusetts, with its not-to-be-denied instinct of aloofness from mere human contact, insists that bus operators shall be set apart from their fellow men by a special guard rail. This is demanded on all types of buses, in spite of the fact that it restricts overloading to 60 per cent on city jobs and 30 per cent on parlor car jobs.

Florida and North Carolina limit the width of the bus body to 84 in. It is generally conceded throughout the rest of the country that 90 in. is a reasonable width, but these two states know better than that. What matters it if the effect of this special body is to reduce the number of occupants of the bus very materially, since with a center aisle passengers can be carried only three seats wide? New Jersey is right in the van with its requirements. Manufacturers are required to build special bodies for operation there which are used nowhere else in the country, and the state has even gone so far as to prescribe dimensions for the chassis.

Operating Restrictions

Mr. Scragg pointed out that in Maryland buses over a certain weight must pay four times the normal tax. This tends to restrain operators from buying a job which might have a longer life at lower maintenance costs because of its sturdiness. The speaker intimated that some manufacturers of the lighter vehicles have been short-sighted enough to support this law instead of taking the broad position of the good of the industry.

Another point which illustrates the fallacy of airtight state regulations of minute operating details is found in the restriction made by some states as to the number of standees. According to the ruling, if the bus is loaded to the legal capacity, it will be illegal to carry an additional passenger. This situation occurs on routes with headways as infrequent as hourly. Particularly in view of the fact that railroad tickets are now being sold in Massachusetts for a joint railway and bus route, it is conceivable that a case may arise where a train will discharge a greater number of passengers than the legal capacity of the bus. These additional passengers, even though it be midnight and the bus is on its last trip, will be refused transportation. Another angle to this, said Mr. Scragg, is that buses are used to a great extent for the transportation of children to and from school and the limitation of capacity makes it uneconomical for the bus operators to give school children rides at special fares when the capacity is limited.

Mr. Scragg said:

> I notice that Secretary Hoover has recently announced the report of his committee on standardization of traffic laws throughout the country, and it seems unfortunate after all these years of battling for uniform laws, having arrived at a place where the government has appointed a committee to make suggestions on the matter, that it seems necessary to start all over again on bus regulation. I am the last one to say that laws should not be passed concerning the public safety, but it seems that many of these regulations go beyond that.

It is not necessary, in the opinion of Mr. Scragg, to enlarge at great length on the effect on bus manufacturers and operating companies alike if each one of the 48 states should decide to have a different law on specifications. Mass production would, of course, be impossible. It is natural that the bus manufacturer without crowding from state governments will improve the bus and make it a safer vehicle if for no other reason than in so doing additional selling points can be developed and marketed on a competitive basis.

It is significant that Mr. Scragg should make the point that it is unwise to expect much support from railway

companies operating co-ordinated bus and trolley services in attacking this strong tendency toward over-regulation on the part of the states. The point has frequently been made by bus manufacturers that traction companies have not as yet really awakened to the material advantages to be derived from standardization in specifying bus equipment.

Mr. Scragg said:

It does not seem possible to get much support from the traction companies, inasmuch as they are not automotive-minded. Most traction operators point with pride to the individual cars they have on the roads. An operator speaks of his car as "my car," as one that he has designed, and it seems impossible to stir him into action in this matter. As a matter of fact, those in the traction industry who yell the most about the laws are the ones who are doing the same things themselves by laying down special specifications.

RECOMMENDATIONS

It was suggested that definite action be taken by the N.A.C.C. and by individual operators to bring to the attention of the proper authorities in each state the hardships involved in laws restricting the use of standard bodies throughout the country. Mr. Scragg also suggested that it might create a favorable reaction if the operators would offer to make suggestions of rulings which would accomplish the purposes desired by the legislatures, while at the same time safeguarding the welfare of the industry.

Continuing in this line of thought Mr. Scragg said:

In order that they may see that our opinions are not biased and that we are not looking at this thing simply from our standpoint, I think we should offer to give them the expression of a joint committee which would be formed of the following: A member of the N.A.C.C. for the automobile manufacturers, a representative of the A.E.R.A. for the traction companies, a representative of the A.A.A.—for the automobile public, and a representative of the S.A.E.—for the automotive engineering fraternity. In this educational way, I think something might be accomplished.

Production of Electric Locomotives Increases

Information on the production of electric locomotives in the United States during the past six years has recently been released by the Department of Commerce. Heretofore no effort has been made to distinguish in the official figures between steam and electric locomotives. Figures have been prepared on both domestic and foreign shipments by months for the six years. These have been consolidated into yearly totals here:

	Domestic	Foreign
1920	306	7
1921	221	17
1922	128	21
1923	207	62
1924	99	8
1925	144	40
Jan.-Feb., 1926	33	2

Ten Gas-Electric Cars Ordered by Boston & Maine

Ten new gas-electric rail cars have just been ordered by the Boston & Maine Railroad from the Osgood-Bradley Car Company, Worcester, Mass. Two of these are 73 ft. in length and eight will have a length of 61 ft. They are of the combination passenger and baggage type, each mounted on one motor truck and one trailer truck. The 73-ft. cars have a total seating capacity of 91 and the 61-ft. cars will accommodate 64 seated passengers.

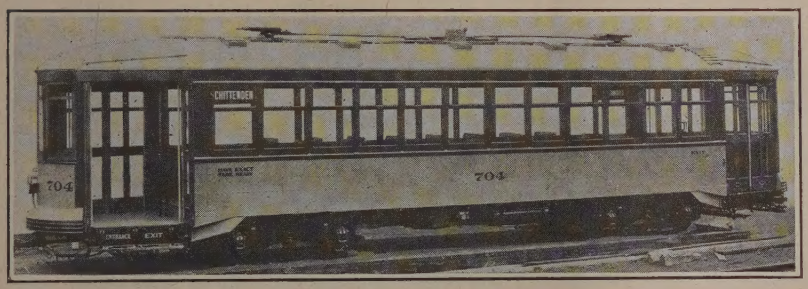
The power plant of these consists of a 275-hp. gas engine directly connected to a generator and mounted in an engine room at one end of the car. The cars are propelled through two electric motors mounted directly on the truck, in accordance with standard practice. Arrangement is made for double-end operation of the unit. All-steel construction is specified, and it is said that the design of the cars will provide for a number of rather novel features, the exact nature of which has not been made known.

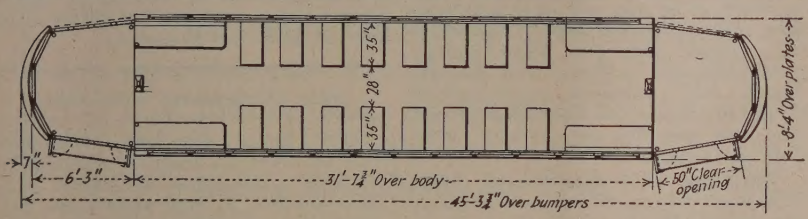
According to an announcement contained in the annual report for 1925 of the Boston & Maine, three of these new cars of the larger size will be used in suburban service at other than rush hours. The report continues:

While there is a field for the self-propelled passenger car on steam railroads its scope is by no means universal. The power and capacity of such cars are inadequate to meet the peak requirements of commutation traffic, and in the case of such short branch lines, with very light traffic, the investment and operating costs are out of all proportion to the revenue. In the former class of traffic motor rail cars cannot satisfactorily replace steam, with the greater capacity of the latter for handling peak loads. In the latter class the highway bus appeared to furnish the economical solution.

There is an intermediate field, however, where the passenger traffic does not warrant steam service, and in some instances the introduction of a less expensive substitute may permit of greater frequency of service and result in the retention of traffic which otherwise would be diverted to public or private transportation on the highway. Most of the new cars, like most of the thirteen which are now in operation, are intended to supply such an improved economical service on branch lines.

Columbus Company Gets 23 New Cars





Seats for 48 passengers are provided in the 23 new double-end motor passenger cars constructed for the Columbus Railway, Power & Light Company, Columbus, Ohio, by the Kuhlman Car Company of Cleveland. The interior is of cherry color and the seats are upholstered with brown leather. Principal data are given here:

Weights:	
Car body	18,180 lb.
Trucks with motors	16,040 lb.
Equipment	2,400 lb.
Total	36,620 lb.
Bolster centers, length	21 ft. 6 in.
Length over all	45 ft. 3¾ in.
Truck wheelbase	5 ft. 4 in.
Width over all	8 ft. 6 in.
Height, rail to trolley base	11 ft. ¼ in.
Body	All steel
Interior trim	Cherry
Headlining	Agasote—metal vestibule
Roof	Arched
Air brakes	Westinghouse, furnished by railway
Bumpers	Hedley anti-climber, channel
Car signal system	Faraday buzzer, Brill signal bells
Car trimmings	Polished bronze
Center and side bearings	Brill
Compressors	Westinghouse DH 16
Control	G. E. 265 Form A
Couplers	Van Dorn No. 27 head
Curtain fixtures	Pantasote
Curtain material	No. 63, brackets only
Destination signs	Hunter illuminated
Door operating mechanism	National Pneumatic manual
Fenders	Brill
Gears and pinions	Solid
Hand brakes	Adams Westlake No. 46
Heater equipment	Railway Utility Company cross-seat type
Headlights	U. S. standard 10 in.
Lightning arresters	General Electric
Motors	Four G. E. 34-hp., 600 volts, inside hung
Finish	Nitro valspar
Sanders	N-L air
Sash fixtures	Dayton roller and racks
Seats	Brill Winner
Seating material	Brown leather
Step treads	Stanwood steel step
Trolley base	G.E.-U.S.
Trolley wheels	General Electric
Trucks	Brill 77E
Ventilators	10 N-L exhaust with register
Wheels	26 in. diameter

$7,000,000 Earned by Westinghouse Air Brake

Net earnings for 1925 as shown by the annual financial statement of Westinghouse Air Brake Company, Wilmerding, Pa., after deducting all expenses, were $6,965,538. Of this amount, $5,532,328 was distributed to stockholders as dividends, and the balance of $1,433,210 was added to the surplus account. While the sales of the parent company and its subsidiaries were practically the same as in 1924, the consolidated shipments were considerably larger, due to the volume of the Union Switch & Signal Company's sales. The report states in part:

Among our many recent developments has been the air brake for automotive ve-

hicles, which has been brought to a high state of efficiency. This company has already equipped several thousand trucks and heavy vehicles with this new type of apparatus.

Thus far during the current year the volume of orders received by the parent and subsidiary companies has been above the average and substantially over the corresponding period of the previous year, and with the large volumes of orders now on the books of our consolidated interests we are encouraged by the outlook for 1926.

Bids for 75 Cars Asked at Seattle

Seattle Municipal Railway, Seattle, Wash., has asked for bids on 75 new cars of modern type to replace heavier equipment now in service. The proposed additions to rolling stock will be of the lightest possible construction consistent with durability and will seat 58 passengers. They are designed for one-man, two-man operation, with the center-exit doors treadle operated. Specifications follow:

Principal Dimensions:	
Length over all	46 ft., 0 in.
Truck wheelbase	5 ft., 4 in.
Width over all	8 ft., 4 in.
Height, rail to top of trolley stand	12 ft., 11¼ in.
Interior trim	Mahogany
Roof	Arch
Air brakes	Westinghouse variable load
Bumpers	Anti-climber 5 in.
Car signal system	Faraday bells and buzzers
Car trimmings	Brass
Conduits and junction boxes	Duraduct
Controller	K-35-KK
Curtain material	Pantasote X2 color 74
Destination signs	Hunter illuminated
Door mechanism	Center door treadle operated
Energy-saving device	Economy meter, three dials
Fare boxes	Johnson—DM3
Fenders	Railway's standard with Ohio Brass life guard
Gears and pinions	Tool steel
Heater equipment	Consolidated No. 303
Headlights	Ohio Brass type Z
Motors	Four Westinghouse 510-A or GE-265, inside hung
Paint	Sherwin-Williams, Murphy and Old Dutch Enamel
Sanders	Air
Sash fixtures	Brass
Seating material	Spring cane
Trolley catchers	Ohio Brass
Trolley base	U. S.-15
Trolley wheels	Five inch
Ventilators	Sixteen small size
Wheels	U. S. or Bethlehem steel, 26 in., 3-in. tread, ¾-in. flange

$1,000,000 for Cars and Buses for Twin Cities

Plans made by the Twin City Rapid Transit Company, Minneapolis, Minn., call for the expenditure of $1,500,000 in 1926. Of this amount, $750,000 will be appropriated for building 50 noiseless street cars and $250,000 for purchase of parlor buses. The cars, which will weigh 25,000 lb., will be equipped with roller bearings throughout, will be provided with heating arrangement to keep the steps clear of snow and ice and will be equipped with pneumatically controlled doors, these supplanting the electrically controlled doors which were tried out on two test cars which have been operating continuously for the past two years.

Metal, Coal and Material Prices

Metals—New York	March 30, 1926
Copper, electrolytic, cents per lb	13.975
Copper, wire base, cents per lb	16.25
Lead, cents per lb	8.20
Zinc, cents per lb	7.45
Tin, Straits, cents per lb	63.00
Bituminous Coal, f.o.b. Mines	
Smokeless mine run, f.o.b. vessel, Hampton Roads, gross tons	$4.25
Somerset mine run, Boston, net tons	2.025
Pittsburgh mine run, Pittsburgh, net tons	2.00
Franklin, Ill., screenings, Chicago, net tons	1.925
Central, Ill., screenings, Chicago, net tons	1.425
Kansas screenings, Kansas City, net tons	2.50
Materials	
Rubber-covered wire, N. Y., No. 14, per 1,000 ft	$6.25
Weatherproof wire base, N.Y., cents per lb.	18.00
Cement, Chicago, net prices, without bags	2.10
Linseed oil (5-bbl. lots), N.Y., cents per lb.	11.00
White lead in oil (100-lb. keg), N. Y., cents per lb	15.50
Turpentine (bbl. lots), N. Y., per gal	$1.02

Rolling Stock

Chicago & Joliet Electric Railway, Joliet, Ill., has placed an order for ten interurban street cars with the Cummings Car & Coach Company, Chicago.

Union Transportation Company, Tulsa, Okla., has purchased two 25-passenger city type Mack buses. The company is a subsidiary of the Oklahoma Union Railway.

Nashville Railway & Light Company, Nashville, Tenn., plans to spend $135,000 for ten new street cars of modern type.

San Francisco, Cal. — Bids for six buses have been asked by the city and county of San Francisco through M. M. O'Shaughnessy, city engineer. The buses are desired for operation on the Embarcadero by the San Francisco Municipal Railway. Bids will be opened on May 5 by the Board of Public Works.

Washington Railway & Electric Company, Washington, D. C., has ordered fifteen 28-ft. 5-in. closed motor cars from the J. G. Brill Company, Philadelphia, Pa. The cars will be mounted on Brill 76-E1 trucks.

Gary Railways, Gary, Ind., has ordered five one-man, light-weight interurban cars from the Cummings Car & Coach Company, Chicago, Ill. The new cars are adapted for double-end operation. They will have an over-all length of about 45 ft. and a seating capacity of 46 and will have a streamline effect in appearance. They are to be equipped with four 35-hp. motors, air brakes and safety control and will weigh fully equipped approximately 37,000 lb. These cars will replace heavy two-man operating cars now in operation in Gary.

Northern Ohio Traction & Light Company, Akron, Ohio, has purchased through the Akron branch of the Mack-International Motor Truck Corporation six 29-passenger city type Mack buses. These will be put in service on a cross-town line, a route of 6 miles, at a 7-cent fare.

Boston & Worcester Street Railway, Worcester, Mass., has ordered three 29-passenger city type Mack buses for operation between Framingham, Marlboro and Hudson. It is understood that the performance of buses in maintaining schedules during the heavy February storms, when other means of transportation failed, was the deciding factor in the purchase of additional motor equipment.

Track and Line

Kansas City Railways, Kansas City, Mo., plans track improvements costing $32,578. A request has been filed in the federal court to rebuild 400 ft. of single track on the Holmes Street line and the realigning of 600 ft. of double track at 40th and Main Streets, where Main Street is being straightened.

Portland Electric Power Company, Portland, Ore., has just placed an order for 25,000 paving blocks to be shipped at once.

Nashville Railway & Light Company, Nashville, Tenn., will undertake a program of reconstruction and improvement of its tracks. For this purpose, $250,000 has been appropriated, to include paving a portion of the city streets required by the municipal government.

Trade Notes

C. E. Floyd has been appointed manager of sales in charge of the Chicago office and warehouse of Ludlum Steel Company, Watervliet, N. Y. He succeeds Mr. Edwards, who has been transferred to the Southern territory with headquarters at Houston, Tex.

L. N. Reed, for the last ten years in the railway electrification and heavy traction department of the Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., has joined American Brown Boveri and will represent the company in the sale of electric locomotives and other similar equipment.

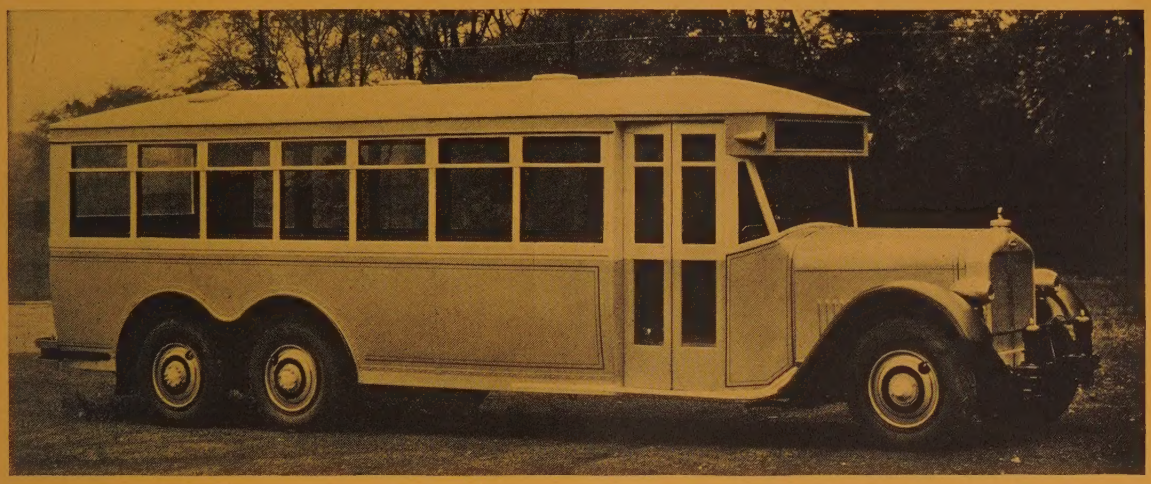
Harlan A. Pratt has been appointed manager of the oil and gas engine department of Ingersoll-Rand Company, New York, N. Y. Mr. Pratt was connected for many years with the sales department of the Westinghouse Electric & Manufacturing Company, later becoming sales manager of the Atlantic Elevator Company, exclusive agent in the East for the Westinghouse peerless traction elevator. He is a graduate of Stevens Institute of Technology and a former director of the American Institute of Electrical Engineers.

New Advertising Literature

Ohio Brass Company, Mansfield, Ohio, has issued a leaflet describing the manifold advantages of Flecto iron. Malleable-iron fittings made under special heat treatment are claimed to retain all their ductility, regardless of subsequent subjection to high or low temperature. The leaflet states that Flecto iron products are singularly impervious to the general wear and tear of railway service.

Mudge & Company, Railway Exchange Building, Chicago, have just issued revised specification sheets on both the Class W. S.-2, "Standard Section" motor car, and the W. S.-3 "Heavy Duty" motor car. Both of these cars are 8 hp., equipped with a single-cylinder motor, roller bearings throughout.

Electric Service Supplies Company, Philadelphia, Pa., has issued bulletin No. 220, describing and showing characteristics of Keystone expulsion-type lightning arresters. Arresters for every type of service from transformer protection to protection of ordinary lighting circuits are listed. Many charts and pictures are included.



And now Cincinnati turns to Kuhlman Type "K" Steel City Coaches

Another large operating company recognizes unusual merit—durability and safety—behind the paint

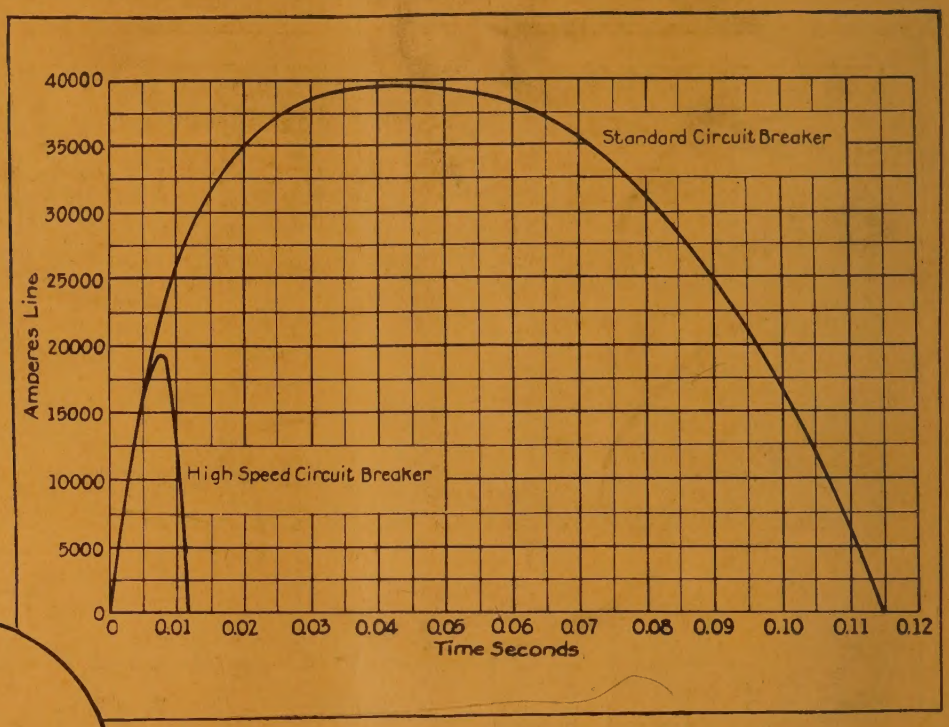
There is something significant in the recent purchase by the Cincinnati Street Railway Company of twenty-five 29-passenger buses equipped with steel bodies of the Kuhlman Type "K" design.

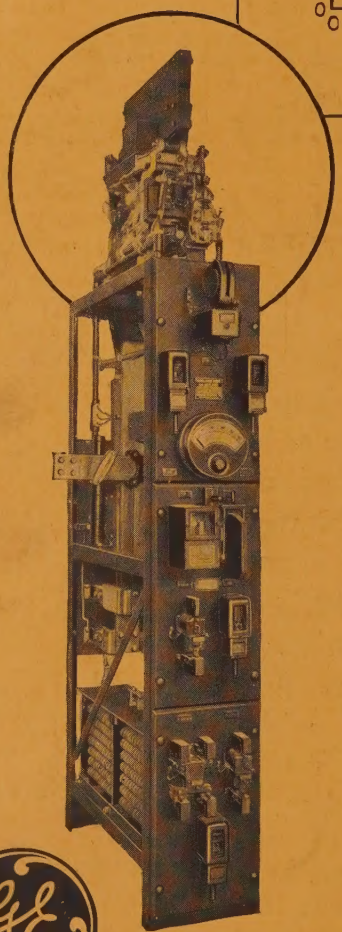
Years of experience in handling public transportation apparently guided this large operating company in specifying a type of body having sturdiness of construction and safety as well as attractiveness of appearance and inviting comfort among its characteristics. Kuhlman steel bodies are designed for service, with particular consideration to the maintenance problem.

If interested write for copy of leaflet No. 301 on Type "K" City Coach or No. 300 on Intercity Coach.

THE J. G. BRILL COMPANY
PHILADELPHIA, PA.

AMERICAN CAR CO. ST. LOUIS MO. — G.C. KUHLMAN CAR CO. CLEVELAND, OHIO. — WASON MANF'G CO. SPRINGFIELD, MASS.





High-Speed Breaker installed on Automatic Reclosing Feeder Panel.

The measure of the added protection

The decision to install high-speed air circuit breakers puts the finishing touches to the layout of a modern, well-protected railway substation.

The G-E High-Speed Breaker has the following important characteristics:

- Very effective rupturing of arc due to magnetic blowout and narrow slots in the arc chute.
- Electro-magnetic tripping without mechanical latches.
- Electro-magnetic, pneumatic, or manual closing.
- Trip-free feature for closing under load.
- Selective feature permitting discrimination between over-loads and short-circuits.
- Self-contained for installation in any convenient location.

Ask for Bulletin 44742-1, which describes this equipment.

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GENERAL ELECTRIC